# Summary of Non-Halibut Catch from the Standardized Stock Assessment Survey Conducted by the International Pacific Halibut Commission in British Columbia from May 28 to July 20, 2009

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# SUMMARY OF NON-HALIBUT CATCH FROM THE STANDARDIZED STOCK ASSESSMENT SURVEY CONDUCTED BY THE INTERNATIONAL PACIFIC HALIBUT COMMISSION IN BRITISH COLUMBIA FROM MAY 28 TO JULY 20, 2009

by

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## ABSTRACT

Flemming, R.G., Yamanaka, K.L., Cooke, K., and Dykstra, C. 2011. Summary of non-Halibut catch from the standardized stock assessment survey conducted by the International Pacific Halibut Commission in British Columbia from May 28 to July 20, 2009. Can. Tech. Rep. Fish. Aquat. Sci. 2971: viii + 87 p.

Since 2003, a third observer has been deployed on the International Pacific Halibut Commission's (IPHC) Standardized Stock Assessment (SSA) survey in British Columbia, IPHC regulatory area 2B. This document summarizes the non-Halibut catch during the 2009 survey and constructs an index of relative abundance for four species of rockfish: Redbanded (*Sebastes babcocki*), Yelloweye (*S. ruberrimus*), Rougheye (*S. aleutianus*), and Quillback (*S. maliger*) from survey data collected from 2003 to 2009. This index from recent survey years shows low growth rates of +13.2%, +9.1%, and -4.3%, for Redbanded, Yelloweye, and Rougheye Rockfishes, respectively. The series growth rate for Quillback Rockfish is +118.7%, but this value may be unduly influenced by two low CPUE values at the beginning of the series in 2003 and 2004. The annual change in the index of positive catches for Redbanded Rockfish is 0.04 over the 2003 to 2009 time series. The index of positive catches continues to decrease for Yelloweye, Rougheye, and Quillback Rockfishes at average annual rates of -0.26, -0.31, and -0.14, respectively.

## RÉSUMÉ

Flemming, R.G., Yamanaka, K.L., Cooke, K., and Dykstra, C. 2011. Summary of non-Halibut catch from the standardized stock assessment survey conducted by the International Pacific Halibut Commission in British Columbia from May 28 to July 20, 2009. Can. Tech. Rep. Fish. Aquat. Sci. 2971: viii + 87 p.

Depuis 2003, un troisième observateur a été affecté à l'étude sur l'évaluation des stocks normalisés de la Commission internationale du flétan du Pacifique (CIFP) en Colombie-Britannique, dans la zone de réglementation 2B de la CIFP. Le présent document fait un résumé des captures de poissons autres que le flétan durant l'étude de 2009 et établit un indice de l'abondance relative de quatre espèces de sébastes : le sébaste à bandes rouges (*Sebastes babcocki*), le sébaste aux yeux jaunes (*Sebastes ruberrimus*), le sébaste à œil épineux (*S. aleutianus*) et le sébaste à dos épineux (*Sebastes maliger*) à partir des données de l'étude recueillies de 2003 à 2009. L'indice issu des années récentes de l'étude montre de faibles taux de croissance de +13,2 %, +9,1 % et -4,3 %, respectivement, pour le sébaste à bandes rouges, le sébaste aux yeux jaunes et le sébaste à œil épineux. Le taux de croissance enregistré pour le sébaste à dos épineux est de +118,7 %. Cependant, cette valeur pourrait être faussée par deux faibles valeurs de prise par unité d'effort (PUE) au début de la série de données en 2003 et 2004. Le taux de changement annuel dans l'indice des taux positifs de prises est de 0,04 pendant la période allant de 2003 à 2009. L'indice des taux de prises positifs continue de diminuer pour le sébaste aux yeux jaunes, le sébaste à œil épineux et le sébaste à dos épineux, pour lesquels on enregistre des taux annuels moyens respectifs de -0,26, -0,31 et -0,14.

# 1.0 INTRODUCTION

The International Pacific Halibut Commission's (IPHC) Standardized Stock Assessment (SSA) survey is a fixed-station longline survey that extends from southern Oregon to the Bering Sea. This survey is directed to index Pacific Halibut (*Hippoglosus stenolepis)* abundance and provide accompanying biological samples to assess the Pacific Halibut (Halibut) stock. The British Columbia (regulatory area 2B) portion of this survey has been conducted annually in various configurations since 1963 (www.iphc.washington.edu). Since 2003, the IPHC has provided the opportunity to deploy an additional technician during the survey to identify the catch to species on a hook-by-hook basis and to collect biological samples from rockfish (Yamanaka *et al.* 2004, 2007, 2008, 2011; Lochead *et al.* 2006; Obradovich *et al.* 2008). Between 2003 and 2006, a contractor was hired to conduct this onboard sampling; beginning in 2007 the IPHC was contracted by DFO to provide the third technician for this survey. In addition to Halibut, many other groundfish species are commonly caught on the survey including North Pacific Spiny Dogfish (*Squalus suckleyi*), Sablefish (*Anoplopoma fimbria*), and rockfishes (*Sebastes* spp.).

Similar to past reports, this report summarizes the catch and effort by location and the biological data for the rockfish species caught incidentally during the survey. Catch and effort data collected from the IPHC SSA survey in British Columbia (BC) provide informative coastwide relative abundance indices for many groundfish species.

# 2.0 METHODS

## 2.1 IPHC Chartered Vessels and Survey Locations

The *F/V Proud Venture* and *F/V Vanisle* were chartered in 2009 to conduct the Canadian portion (Area 2B) of the IPHC SSA surveys. The *F/V Proud Venture* (CFV/VRN 23197) is a 70-foot steel vessel, skippered by Charles Harper. The *F/V Vanisle* (CFV/VRN 21912) is a 69-foot vessel, skippered by Rob Stanley.

The Canadian portion of the IPHC survey consists of 170 fixed (non-random) survey stations. From 1998 to the present, survey stations are positioned equidistant from one another on a 10 nm square grid. Beginning in 1998, regulatory area 2B was divided into four survey regions: 'Vancouver', 'Goose Island', 'St. James', and 'Charlotte'. Surveys were conducted annually in all regions with the exception of 'Vancouver', which was surveyed in 1999 and in years since 2001. The 2009 Area 2B and SE Alaska bycatch sampling manual prepared by IPHC (Appendix A) presents maps of these stations in Appendix 3 of that document, "IPHC Stations by DFO Area". Locations of stations fished in 2009 are also plotted (by mean depth) in Figure 1.

## 2.2 Fishing Gear and Operations

Standardized "conventional" (fixed) longline fishing gear was deployed during the survey and standardized fishing operations followed, as described in the IPHC report of assessment and research activities (http://www.iphc.int/publications/rara/2009/553.pdf).

Fishing gear specifications and fishing operations are detailed in Yamanaka *et al.* (2004). For 2009, seven skates per string were deployed. The duration of the fishing event or 'soak time' of the set is calculated as the time elapsed between the last anchor set over the stern and the first anchor hauled aboard (Yamanaka *et al.* 2004). A Sea-Bird Electronics Inc SeaCat 19 water column profiler (temperature, depth, and conductivity) was deployed on all sets. Data are available from the IPHC upon request. Average bottom depths are calculated as the average of the minimum and maximum bottom depths of the set.

### 2.3 Data Collection

The hook-by-hook observations and biological sampling were conducted as described for the 2003 survey (Yamanaka *et al.* 2004). Appendix A details the biological sampling protocol compiled by the IPHC. For 2009, all rockfish species were sampled and for the first time there was an attempt to record Blackspotted Rockfish (*Sebastes melanostictus*) separately from Rougheye Rockfish based on visual assessments (Orr and Hawkins 2008).

In previous years, the majority of rockfish length data was collected on dressed fish (gilled and gutted with gonads intact). Conversion factors to round length were calculated in Obradovich *et al.*, (2008), based on linear regressions fit to all round and dressed fork length data collected in 2004, 2005, and 2006 for Redbanded, Yelloweye, and Quillback Rockfish. Similar methods were used in Lochead *et al.* (2006) to calculate conversion factors for Rougheye Rockfish using combined data from 2003 and 2004. To attempt to improve the conversion factors and account for recognized variations in fish characteristics with latitude and variations in dressing technique, DFO requested in 2009 to collect additional samples of corresponding round and dressed lengths and weights. Sampling crew determined that the most expedient option was to adapt the sampling procedure to collect round lengths and weights for all species. So, in 2009, the majority of rockfish length data was collected on round fish. Lengths for six individual fish that were measured in the dressed state are converted back to the round state using the conversion factors previously developed. The conversion factor for Rougheye Rockfish was also applied to the Shortraker Rockfish, which was not sampled but is similar in morphology to the Rougheye Rockfish. The regression equations from previous years are reprinted here for convenience.

| | |
|---|---|
| Redbanded: | $l_r = 0.9870\, l_d + 5.4041$ mm |
| Yelloweye: | $l_r = 1.0048\, l_d - 5.9226$ mm |
| Rougheye: | $l_r = 0.9675\, l_d + 15.555$ mm |
| Quillback: | $l_r = 0.9400\, l_d + 17.7126$ mm |

where $l_r$ = round length and $l_d$ = dressed length

### 2.4 Catch Rate

Catch rate ($U$) is defined here as the total number of fish caught ($N$) divided by the number of normal condition hooks ($H$) returned from the set, multiplied by 100. The number of fish caught does not include those fish that were identified but escaped before being brought on board (i.e., lost at the roller). The hook count excludes all missing, bent, and broken hooks. Mean species catch rates ($\overline{U}_s$) are calculated as the sum of the

non-zero catch rates per set ($U_{is}$) divided by the number of sets with positive catch ($n$), where $s$ denotes the species, and $i$ denotes the set.

$$U_{is} = \frac{N_{is}}{H_i} * 100 \qquad \overline{U}_s = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{N_{is}}{H_i} * 100\right) \qquad (3, 4)$$

**2.5 Relative abundance index**

For the time series of data from earlier surveys conducted in 1995 to 2002, a relative abundance index is presented in Yamanaka *et al.* (2011).

The relative abundance index is constructed from $\log_2$ transformed non-zero catch rate data. Examining the slope of the regression line running through the median values gives an annual logarithmic growth rate ($b$), where a slope of 1 and -1 reflect a doubling and halving, respectively, of the catch rate (Schnute *et al.* 2004). Annual relative growth rate ($r$) is calculated from:

$$r = 2^b - 1 \qquad (5)$$

where $b$ is the annual logarithmic growth rate. The accumulated relative change ($R$) is similarly calculated from:

$$R_l = 2^{b(l-1)} - 1 \qquad (6)$$

where $b$ is the annual logarithmic growth rate and $l$ is the number of observations over the time series (Schnute *et al.* 2004).

The index of relative abundance is created using catch rate data from all stations fished during 2003 to 2009. During this period, a third technician collected complete hook by hook catch information, and survey design, gear specifications and fishing operations were consistent. Hook counts exclude all missing, bent or broken hooks. This index benefits from the inclusion of data from all stations, accounting for hook problems, and its conceptual simplicity. With more than six years of data this index can be expected to capture trends in relative abundance (Yamanaka *et al.* 2004).

**2.6 Index of positive catches**

Only a small proportion of the stations fished in this Halibut-directed survey yield a rockfish catch. Since the indices of relative abundance are determined from positive catches, the trends in positive catches over time are also examined. Because this is a spatially explicit survey, positive trends may represent an increasing spatial distribution of rockfish as more of the stations are yielding rockfish. In addition, the frequency of zero catches has also shown to be proportional to abundance in hook and line fisheries (Bannerot and Austin 1983).

## 3.0 RESULTS AND DISCUSSION

### 3.1 Survey Locations

The *F/V Proud Venture* fished the 'Vancouver', 'Goose Island', and 'St. James' regions between May 28 and July 20, 2009 and the *F/V Vanisle* fished the 'Charlotte' region between June 28 and July 18, 2009. (The *F/V Vanisle* also conducted portions of the IPHC SSA survey in the 'Fairweather' region in Alaskan waters.) Figure 1 shows survey locations grouped by mean depth of fishing plotted over IPHC survey regions, and Pacific States Marine Fisheries Commission (PSMFC) Areas. Details for each set are listed in Appendix B.

### 3.2 Catch Summary

The DFO "GFBio" database archives data from the 2009 IPHC SSA survey with TRIP_IDs 69047 (*F/V Proud Venture*) and 69048 (*F/V Vanisle* ). The FOS database (Fisheries Operations System) houses landed catch weights under Trip IDs 125432, 125872, 126379, 126965, 127631, 128177 (*F/V Proud Venture*) , 126427, 127039, 127663, and 128115 (*F/V Vanisle*), readily accessible through the Groundfish Section database front-end "GFFOS". Appendix C lists detailed set information by PSMFC Area, common IPHC station and year (2003 to 2009), showing the number of hooks deployed, returned, with bait, empty, or with catch, separated for Halibut, North Pacific Spiny Dogfish (Dogfish), Redbanded Rockfish, Yelloweye Rockfish, Rougheye Rockfish, and Quillback Rockfish, with catch per 100 hooks shown for rockfish.

Species catch, in numbers, is shown in Table 1. Dogfish, Halibut, and Sablefish are the three most commonly caught species on the survey, accounting for 78% (in numbers) of all species caught. Table 2 lists species that were identified at the surface but escaped before being brought on board, which amount to only a half a percentage of the total catch of marine fish. A total of 49,428 kilograms (kg) of Halibut and 13,327 kg of Rockfish were landed during the survey (Table 3). Yelloweye Rockfish and Redbanded Rockfish account for the 2$^{nd}$ and 3$^{rd}$ greatest landed weights by species. Sablefish caught on the 2009 survey were not landed.

#### *3.2.1. Hook by Hook*

Forty percent of the hooks deployed on the survey returned empty, 26% of the hooks returned with bait or bait skin, and 34% of the hooks were occupied by a fish or an invertebrate (Table 4). Less than one percent of the hooks were missing, bent or broken. Table 5 lists the total number of hooks deployed in each year from 2003 to 2009, and summarizes line snarls. There were 448 line snarls in 2009, which is consistent with previous years. Fish are often caught on hooks involved in line snarls, so in many cases these hooks can still be considered to be fishing.

*3.2.2. Biological Sampling*

Biological samples were taken for 14 species of rockfish, including 1580, 1268, 346, and 177 otolith pairs from Redbanded, Yelloweye, Rougheye, and Quillback, respectively (Table 6).

Rockfish length (round) summaries by species, for all regions combined, and by PSMFC Area, are shown in Table 7. Area 5C/D had the largest mean size for Yelloweye Rockfish at 56cm.

Rockfish sexual maturity summaries are shown in Table 8. The majority of rockfish caught during the survey were sexually mature. In previous years there have been a higher proportion of males, with female Yelloweye Rockfish making up only 37-44% of the catch. In 2009 there was a nearly even sex ratio for Yelloweye Rockfish, with females making up 49.6% of the sampled catch.

Summary statistics of age data collected in 2009 are presented in Table 9 for Yelloweye Rockfish and Table 10 Quillback Rockfish, for all areas combined and by PSMFC Areas. Also shown are mean, minima and maxima by sex for each species. Age frequency histograms for Yelloweye Rockfish and Quillback Rockfish, males and females combined, are shown in Figure 2. The age of Yelloweye Rockfish caught ranged from 12 years to 115 years, with a mean of 36 years. The most common age of Yelloweye Rockfish caught on this 2008 IPHC SSA survey was 27 years. Yelloweye Rockfish from area 5E had the oldest mean age at 40 years, all other areas had a mean age of approximately 36 years. The mean age of female Yelloweye Rockfish is 39 years, greater than that for males throughout the survey, at 34 years. However, in area 5E, the mean age of male Yelloweye Rockfish was 40 years, one year greater than the mean age of females. The greatest disparity in ages between sexes occurred in area grouping 3C/D,5A where the mean age of female Yelloweye Rockfish was 44 years and the mean age of males was 33 years. Quillback Rockfish ages ranged from 13 to 70 years with a mean of approximately 33 years. Quillback Rockfish ages were bi-modal, with 25 and 33 years occurring with equal frequency. The mean age of male Quillback Rockfish, at 34 years, was greater than the mean age of 33 years for female Quillback Rockfish. As with Yelloweye Rockfish, Area 5E produced the oldest mean age for male Quillback Rockfish of 38 years.

**3.3 Catch Rates**

Summaries of non-zero rockfish catch rates (numbers of fish per 100 hooks), for the entire BC coast (IPHC area 2B) and separated by PSMFC Areas, are presented in Table 11. Overall mean catch rates were highest for Redbanded and Yelloweye rockfishes at 3.7 fish per 100 hooks and 2.7 fish per 100 hooks, respectively. The highest mean catch rate for Redbanded Rockfish occurred in area 5E at 6.2 fish per 100 hooks, while for Yelloweye Rockfish the highest rates occurred in area 5E at 4.3 fish per 100 hooks.

Table 11 also shows the proportion of positive catches for each rockfish species. Redbanded and Yelloweye Rockfishes occurred in only 76 and 74 respectively of 170 sets. Quillback Rockfish occur in only 28 sets. Boccaccio, and Canary, Rougheye,

Shortraker, and Silvergray Rockfishes were encountered on average in 12.4% of the sets. Other rockfishes were caught only sporadically, ranging from 1 to 6 positive catches. Darkblotched and Yellowtail Rockfishes were not encountered in 2009.

The spatial distribution of rockfish catch rates (numbers per 100 hooks) of Redbanded, Yelloweye, Rougheye, and Quillback, four commonly caught species, are shown in Figures 3 through 6. Redbanded, Yelloweye, and Quillback Rockfishes were caught throughout the entire survey area. Rougheye Rockfish was caught more commonly in the northern half of the survey area. Catch identified as Blackspotted Rockfish is not included on Figure 5. Redbanded Rockfish occur consistently in the deepest stratum of the *'St. James'* and *'Goose Island'* IPHC survey regions. Generally, the distributions of the catch rates are related to mean fishing depth.

**3.4 Relative abundance index**

A relative abundance index was constructed for each of four commonly caught rockfish species. This index employs all 170 stations fished each year between 2003 and 2009, with the exception of one station in 2008 for which hook tally data was lost overboard, and uses 100 hooks as a unit of effort (Table 12 and Figures 7 through 10). Rougheye and Blackspotted Rockfishes have been aggregated to maintain comparability with other survey years.

For the four commonly caught rockfish species, the $\log_2$ transformed median catch per unit effort (of non-zero catches) are shown in Table 12 for 2003 to 2009.

Figures 7 through 10 present the abundance indices for the four commonly caught rockfish species. Boxplots of the $\log_2$ transformed median non-zero catch per unit effort for the time series are shown in the upper panels and a series median and growth rate with $r^2$ value are listed. The lower panels of each show a plot of the rate of positive catches with a regression line for the index shown and the average annual change listed.

For the 2003 to 2009 time series index the change in CPUE from year to year is nearly zero, except in the case of Quillback Rockfish which shows an increase in CPUE. The series growth rate in the last seven years of the survey is +13.2%, +9.1%, -4.3%, for Redbanded, Yelloweye, and Rougheye Rockfishes, respectively (Figure 7, 8, and 9). The series growth rate for Quillback Rockfish is +118.7%, but this value may be unduly influenced by two low CPUE values at the beginning of the series in 2003 and 2004 (Figure 12).

**3.5 Index of positive catches**

The positive catch rate from all stations in 2003 to 2009 ranges from a high of 45% of stations for Redbanded Rockfish in 2005 and in 2009 to a low of 11% of stations for Rougheye Rockfish in both 2006 and 2007 (Table 12).

Redbanded, Yelloweye, and Quillback Rockfishes were caught more frequently in 2009 than in previous years. The proportion of positive catches have changed only slightly

over the 2003 to 2009 time series, with an average annual change of +0.04, -0.26, -0.31, and -0.14 for Redbanded, Yelloweye, Rougheye, and Quillback Rockfishes, respectively.

## SUMMARY

The 2003 – 2009 indices reveal no remarkable changes to trends. Series median catch rates are unchanged by the addition of 2009 data. For Redbanded and Yelloweye Rockfishes, slightly higher CPUE series growth rates coincide with relatively high proportions of positive catches in 2009. For Rougheye and Quillback Rockfishes the proportion of positive catches in 2009 is closer to the series average. All indices appear to be fairly stable, suggesting only small changes in the relative abundances of these species.

The IPHC SSA Halibut survey provides valuable, fishery independent relative abundance indices for commonly caught rockfish. There is no other coastwide, long-term abundance index available for these rockfishes. This survey may also provide similar indices for other species commonly caught on longline gear, such as Dogfish and Sablefish, and proportion of positive catch trends for other less commonly caught species.

## ACKNOWLEDGEMENTS

We thank IPHC staff for their assistance with at-sea data collection, office data management and project facilitation, including Aaron Ranta and Erica Anderson. Elizabeth Dubofsky, Dean Gaidica, Greg Riepma, Lisa Relke, Jay Sitar, Tucker Soltau, and Andrew Vatter are acknowledged for their individual efforts onboard the charter vessels. The Pacific Biological Station (PBS) sclerochronology lab provide the age estimates for Yelloweye Rockfish and Quillback Rockfish and the staff of the PBS Groundfish data management unit provide data management. Thank-you to the IPHC charter vessel skippers and crews for their care and assistance during the survey; skipper Rob Stanley and his crew Dan Johnson, Dan Nelson, Peter Amero onboard the *F/V Vanisle*, and skipper Chuck Harper, relief skipper Tom Chipman, and their crew Nolan Harper, Justin Clark, and Dave Hicks onboard the *F/V Proud Venture*. We also thank Greg Workman for reviewing this document.

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Table 1. Summary of species catch brought on board in numbers (descending order) and as a percent of total marine fish species for the BC coast, and in numbers by each PSMFC Area. Rockfish are highlighted.

| Common Name | Taxonomic Name | Total | 3C/D, 5A | 5B | 5C/D | 5E | % Total Fish |
|---|---|---|---|---|---|---|---|
| North Pacific Spiny Dogfish | *Squalus suckleyi* | 19112 | 6802 | 5556 | 6220 | 534 | 47.88 |
| Pacific Halibut | *Hippoglossus stenolepis* | 9204 | 2809 | 2625 | 2986 | 784 | 23.06 |
| Sablefish | *Anoplopoma fimbria* | 3342 | 820 | 1098 | 1067 | 357 | 8.37 |
| Redbanded Rockfish | *Sebastes babcocki* | 1910 | 204 | 668 | 908 | 130 | 4.78 |
| Arrowtooth Flounder | *Reinhardtius stomias* | 1908 | 627 | 369 | 854 | 58 | 4.78 |
| Yelloweye Rockfish | *Sebastes ruberrimus* | 1358 | 326 | 606 | 279 | 147 | 3.40 |
| Longnose Skate | *Raja rhina* | 1242 | 482 | 423 | 306 | 31 | 3.11 |
| Lingcod | *Ophiodon elongatus* | 504 | 297 | 68 | 98 | 41 | 1.26 |
| Sunflower Starfish | *Pycnopodia helianthoides* | 448 | 185 | 72 | 169 | 22 | - |
| Rougheye Rockfish | *Sebastes aleutianus* | 343 | 12 | 26 | 62 | 243 | 0.86 |
| Quillback Rockfish | *Sebastes maliger* | 181 | 66 | 19 | 46 | 50 | 0.45 |
| Shortspine Thornyhead | *Sebastolobus alascanus* | 155 | 4 | 58 | 65 | 28 | 0.39 |
| Shortraker Rockfish | *Sebastes borealis* | 147 | 3 | 56 | 70 | 18 | 0.37 |
| Big Skate | *Raja binoculata* | 116 | 63 | 14 | 32 | 7 | 0.29 |
| Pacific Cod | *Gadus macrocephalus* | 97 | 16 | 10 | 70 | 1 | 0.24 |
| Silvergray Rockfish | *Sebastes brevispinis* | 78 | 10 | 33 | 14 | 21 | 0.20 |
| Canary Rockfish | *Sebastes pinniger* | 66 | 24 | 10 | 13 | 19 | 0.17 |
| Fish-Eating Star | *Stylasterias forreri* | 65 | 23 | 12 | 26 | 4 | - |
| Spotted Ratfish | *Hydrolagus colliei* | 36 | 7 | | 17 | 12 | 0.09 |
| Bocaccio | *Sebastes paucispinis* | 24 | 8 | 9 | 3 | 4 | 0.06 |
| Starfish | *Asteroidea* | 23 | 15 | 8 | | | - |
| Blackspotted Rockfish | *Sebastes melanostictus* | 23 | | 13 | 3.00 | 7.00 | 0.06 |
| Octopus | *Octopoda* | 17 | 3 | 3 | 11 | | - |
| Petrale Sole | *Eopsetta jordani* | 16 | 8 | | 6 | 2 | 0.04 |
| Tope Shark | *Galeorhinus galeus* | 16 | 2 | 3 | 9 | 2 | 0.04 |
| Yellowmouth Rockfish | *Sebastes reedi* | 12 | 1 | 11 | | | 0.03 |
| Anemone | *Actiniaria* | 11 | 7 | | 4 | | - |
| Pacific Sleeper Shark | *Somniosus pacificus* | 9 | | 6 | 3 | | 0.02 |
| Aleutian Skate | *Bathyraja aleutica* | 8 | | 1 | 6 | 1 | 0.02 |
| Blue Shark | *Prionace glauca* | 8 | 2 | 2 | 4 | | 0.02 |
| China Rockfish | *Sebastes nebulosus* | 6 | 1 | | 1 | 4 | 0.02 |
| Wolf Eel | *Anarrhichthys ocellatus* | 5 | 3 | 1 | 1 | | 0.01 |
| Sea Whip | *Balticina septentrionalis* | 3 | 2 | | 1 | | - |
| Alaska Skate | *Bathyraja parmifera* | 3 | | 1 | 2 | | 0.01 |
| Basket Stars | *Euryalina* | 3 | 2 | | 1 | | - |
| Bluntnose Sixgill Shark | *Hexanchus griseus* | 3 | 3 | | | | 0.01 |
| Southern Rock Sole | *Lepidopsetta bilineata* | 3 | 3 | | | | 0.01 |
| Slender Sole | *Lyopsetta exilis* | 3 | 1 | 2 | | | 0.01 |
| Sponges | *Porifera* | 3 | 1 | 1 | 1 | | - |
| Radiata | *Radiata* | 3 | 1 | | 2 | | - |
| Walleye Pollock | *Theragra chalcogramma* | 3 | 1 | | 2 | | 0.01 |
| Anthozoa | *Anthozoa* | 2 | | | 2 | | - |
| Sandpaper Skate | *Bathyraja interrupta* | 2 | | | 2 | | 0.01 |
| Steller Sea Lion | *Eumetopias jubatus* | 2 | 1 | 1 | | | - |
| Inanimate Object(s) | *Inanimate object(s)* | 2 | 2 | | | | - |
| Box Crabs | *Lopholithodes* | 2 | | | 1 | 1 | - |
| Copper Rockfish | *Sebastes caurinus* | 2 | 1 | | 1 | | 0.01 |
| Greenstriped Rockfish | *Sebastes elongatus* | 2 | 1 | 1 | | | 0.01 |
| Rosethorn Rockfish | *Sebastes helvomaculatus* | 2 | 1 | | | 1 | 0.01 |
| Whiteblotched Skate | *Bathyraja maculata* | 1 | | 1 | | | 0.00 |
| Pacific Grenadier | *Coryphaenoides acrolepis* | 1 | 1 | | | | 0.00 |
| Gastropods | *Gastropoda* | 1 | | | 1 | | - |
| Sea Cucumbers | *Holothuroidea* | 1 | | | | 1 | - |
| Salmon Shark | *Lamna ditropis* | 1 | | 1 | | | 0.00 |
| Bent-Nose Macoma | *Macoma nasuta* | 1 | | | 1 | | - |
| Skates | *Rajidae* | 1 | 1 | | | | 0.00 |
| Vermilion Rockfish | *Sebastes miniatus* | 1 | 1 | | | | 0.00 |
| Tiger Rockfish | *Sebastes nigrocinctus* | 1 | 1 | | | | 0.00 |
| Unidentified Organic Matter | Unknown | 1 | 1 | | | | - |
| **Marine Fish Only** | | **39919** | **12605** | **11691** | **13133** | **2490** | **100** |
| **Total Catch** | | **40543** | **12855** | **11788** | **13370** | **2530** | |

Nb: this table includes second species caught on the same hook, and thus reports higher catch than table 3.

Table 2. Summary of species catch identified but escaped before being brought on board ("lost at the roller") in numbers (descending order) and as a percent of total marine fish species for the BC coast and in numbers by each PSMFC Area.

| Common Name | Taxonomic Name | Total | 3C/D, 5A | 5B | 5C/D | 5E | % Total Fish |
|---|---|---|---|---|---|---|---|
| Pacific Halibut | Hippoglossus stenolepis | 104 | 35 | 39 | 28 | 2 | 0.26 |
| Redbanded Rockfish | Sebastes babcocki | 36 | 2 | 15 | 19 | | 0.09 |
| Yelloweye Rockfish | Sebastes ruberrimus | 13 | 3 | 8 | 2 | | 0.03 |
| Shortraker Rockfish | Sebastes borealis | 5 | | 3 | | 2 | 0.01 |
| Rougheye Rockfish | Sebastes aleutianus | 3 | | | | 3 | 0.01 |
| Canary Rockfish | Sebastes pinniger | 3 | 2 | | | 1 | 0.01 |
| Shortspine Thornyhead | Sebastolobus alascanus | 2 | | 2 | | | 0.01 |
| Pacific Cod | Gadus macrocephalus | 1 | | 1 | | | 0.00 |
| Octopus | Octopoda | 1 | 1 | | | | - |
| Arrowtooth Flounder | Reinhardtius stomias | 1 | | 1 | | | 0.00 |
| Quillback Rockfish | Sebastes maliger | 1 | 1 | | | | 0.00 |
| Blackspotted Rockfish | Sebastes melanostictus | 1 | | 1 | | | 0.00 |
| **Marine Fish Only** | | **170** | **43** | **70** | **49** | **8** | **0.43** |
| **Total Catch** | | **171** | **44** | **70** | **49** | **8** | |

Table 3. Total landed weight (kg) by species for the BC stations in the 2009 IPHC survey. Weights are for fresh, round fish, converted automatically and provided by the Groundfish Section front-end to the Fisheries Operating System database (GFFOS).

| Species | Kilograms |
|---|---|
| Pacific Halibut | 49,428 |
| Yelloweye Rockfish | 5,564 |
| Redbanded Rockfish | 4,756 |
| Shortraker Rockfish | 1,178 |
| Rougheye Rockfish | 1,010 |
| Shortspine Thornyhead | 255 |
| Quillback Rockfish | 221 |
| Silvergray Rockfish | 176 |
| Canary Rockfish | 128 |
| Bocaccio | 101 |
| Pacific Cod | 96 |
| Yellowmouth Rockfish | 14 |
| Dusky Rockfish | 7 |
| Vermilion Rockfish | 6 |
| China Rockfish | 6 |
| Sablefish | 4 |
| Copper Rockfish | 3 |
| Tiger Rockfish | 1 |
| Blackspotted Rockfish | 1 |
| Pacific Ocean Perch | 1 |
| Rosethorn Rockfish | 0 |
| Greenstriped Rockfish | 0 |
| ALL ROCKFISH | 13,173 |

Table 1. Summary of species catch brought on board in numbers (descending order) and as a percent of total marine fish species for the BC coast, and in numbers by each PSMFC Area. Rockfish are highlighted.

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| Longnose Skate | *Raja rhina* | 1242 | 482 | 423 | 306 | 31 | 3.11 |
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| Blackspotted Rockfish | *Sebastes melanostictus* | 23 | | 13 | 3.00 | 7.00 | 0.06 |
| Octopus | *Octopoda* | 17 | 3 | 3 | 11 | | - |
| Petrale Sole | *Eopsetta jordani* | 16 | 8 | | 6 | 2 | 0.04 |
| Tope Shark | *Galeorhinus galeus* | 16 | 2 | 3 | 9 | 2 | 0.04 |
| Yellowmouth Rockfish | *Sebastes reedi* | 12 | 1 | 11 | | | 0.03 |
| Anemone | *Actiniaria* | 11 | 7 | | 4 | | - |
| Pacific Sleeper Shark | *Somniosus pacificus* | 9 | | 6 | 3 | | 0.02 |
| Aleutian Skate | *Bathyraja aleutica* | 8 | | 1 | 6 | 1 | 0.02 |
| Blue Shark | *Prionace glauca* | 8 | 2 | 2 | 4 | | 0.02 |
| China Rockfish | *Sebastes nebulosus* | 6 | 1 | | 1 | 4 | 0.02 |
| Wolf Eel | *Anarrhichthys ocellatus* | 5 | 3 | 1 | 1 | | 0.01 |
| Sea Whip | *Balticina septentrionalis* | 3 | 2 | | 1 | | - |
| Alaska Skate | *Bathyraja parmifera* | 3 | | 1 | 2 | | 0.01 |
| Basket Stars | *Euryalina* | 3 | 2 | | 1 | | - |
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| Sponges | *Porifera* | 3 | 1 | 1 | 1 | | - |
| Radiata | *Radiata* | 3 | 1 | | 2 | | - |
| Walleye Pollock | *Theragra chalcogramma* | 3 | 1 | | 2 | | 0.01 |
| Anthozoa | *Anthozoa* | 2 | | | 2 | | - |
| Sandpaper Skate | *Bathyraja interrupta* | 2 | | | 2 | | 0.01 |
| Steller Sea Lion | *Eumetopias jubatus* | 2 | 1 | 1 | | | - |
| Inanimate Object(s) | *Inanimate object(s)* | 2 | 2 | | | | - |
| Box Crabs | *Lopholithodes* | 2 | | | 1 | 1 | - |
| Copper Rockfish | *Sebastes caurinus* | 2 | 1 | | 1 | | 0.01 |
| Greenstriped Rockfish | *Sebastes elongatus* | 2 | 1 | 1 | | | 0.01 |
| Rosethorn Rockfish | *Sebastes helvomaculatus* | 2 | 1 | | | 1 | 0.01 |
| Whiteblotched Skate | *Bathyraja maculata* | 1 | | 1 | | | 0.00 |
| Pacific Grenadier | *Coryphaenoides acrolepis* | 1 | 1 | | | | 0.00 |
| Gastropods | *Gastropoda* | 1 | | | 1 | | - |
| Sea Cucumbers | *Holothuroidea* | 1 | | | | 1 | - |
| Salmon Shark | *Lamna ditropis* | 1 | | 1 | | | 0.00 |
| Bent-Nose Macoma | *Macoma nasuta* | 1 | | | 1 | | - |
| Skates | *Rajidae* | 1 | 1 | | | | 0.00 |
| Vermilion Rockfish | *Sebastes miniatus* | 1 | 1 | | | | 0.00 |
| Tiger Rockfish | *Sebastes nigrocinctus* | 1 | 1 | | | | 0.00 |
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| Rougheye Rockfish | Sebastes aleutianus | 3 | | | | 3 | 0.01 |
| Canary Rockfish | Sebastes pinniger | 3 | 2 | | | 1 | 0.01 |
| Shortspine Thornyhead | Sebastolobus alascanus | 2 | | 2 | | | 0.01 |
| Pacific Cod | Gadus macrocephalus | 1 | | 1 | | | 0.00 |
| Octopus | Octopoda | 1 | 1 | | | | - |
| Arrowtooth Flounder | Reinhardtius stomias | 1 | | 1 | | | 0.00 |
| Quillback Rockfish | Sebastes maliger | 1 | 1 | | | | 0.00 |
| Blackspotted Rockfish | Sebastes melanostictus | 1 | | 1 | | | 0.00 |
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| Canary Rockfish | 128 |
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| Pacific Cod | 96 |
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| Dusky Rockfish | 7 |
| Vermilion Rockfish | 6 |
| China Rockfish | 6 |
| Sablefish | 4 |
| Copper Rockfish | 3 |
| Tiger Rockfish | 1 |
| Blackspotted Rockfish | 1 |
| Pacific Ocean Perch | 1 |
| Rosethorn Rockfish | 0 |
| Greenstriped Rockfish | 0 |
| ALL ROCKFISH | 13,173 |

Table 4. Summary of hook observations by description, DFO GFBio database code, number of hooks retrieved, and percent of total hooks.

**HOOK YIELD**

| Description | GFBio Code | # hooks | % of total |
|---|---|---|---|
| Unknown | 0 | 1 | 0.00 |
| Empty hook | 1 | 46789 | 39.58 |
| Bait on hook | 2 | 13438 | 11.37 |
| Animal on hook (fish or invertebrate) | 3 | 40081 | 33.91 |
| Species dropped off hook | 5 | 170 | 0.14 |
| Bait skin on hook | 6 | 17347 | 14.67 |
| Eaten or bitten (by shark, etc.) | 8 | 386 | 0.33 |
| **Total** | | **118212** | **100.00** |

**HOOK CONDITION**

| Description | GFBio Code | # hooks | % of total |
|---|---|---|---|
| Unknown | 0 | 1 | 0.00 |
| Normal | 6 | 117106 | 99.06 |
| Missing, bent, or broken hook | 7 | 1105 | 0.93 |
| **Total** | | **118212** | **100.00** |

**LINE CONDITION**

| Description | GFBio Code | # hooks | % of total |
|---|---|---|---|
| Normal | 1 | 116746 | 98.76 |
| Snarl in line | 2 | 1456 | 1.23 |
| Gear parted | 4 | 10 | 0.01 |
| **Total** | | **118212** | **100.00** |

NB: Table counts do not include second animals/inanimate objects caught on the same hook.

Table 5. Number of hooks deployed and summary of line snarls, including the total number and percentage of hooks involved in snarls each year, for 2003 to 2009 data.

| YEAR | Number of Hooks Deployed | Total Number of Snarls | Number of Hooks Per Snarl | | | | Total Number of Hooks Involved | % hooks involved |
|---|---|---|---|---|---|---|---|---|
| | | | Average | Minimum | Maximum | Standard Deviation | | |
| 2003 | 134,956 | 294 | 1.44 | 1 | 15 | 1.59 | 423 | 0.31 |
| 2004 | 135,288 | 547 | 3.13 | 1 | 57 | 4.22 | 1711 | 1.26 |
| 2005 | 118,897 | 426 | 3.03 | 1 | 111 | 6.09 | 1291 | 1.09 |
| 2006 | 101,273 | 281 | 4.05 | 1 | 72 | 6.54 | 1139 | 1.12 |
| 2007 | 84,231 | 243 | 4.24 | 1 | 66 | 6.52 | 1030 | 1.22 |
| 2008 | 83,695 | 189 | 5.86 | 1 | 45 | 7.91 | 1107 | 1.32 |
| 2009 | 118,212 | 448 | 3.25 | 1 | 77 | 5.77 | 1456 | 1.23 |

Table 6. Number of specimens, by species, measured for length, examined for sex and maturity state, and with otoliths removed for ageing.

| Species | Lengths | Weights | Sex | Maturities | Otoliths |
|---|---|---|---|---|---|
| Redbanded Rockfish | 1889 | 1850 | 1572 | 1572 | 1580 |
| Yelloweye Rockfish | 1349 | 1340 | 1259 | 1259 | 1268 |
| Rougheye Rockfish | 368 | 364 | 346 | 345 | 346 |
| Quillback Rockfish | 177 | 171 | 177 | 177 | 177 |
| Shortraker Rockfish | 116 | 111 | 64 | 64 | 64 |
| Silvergray Rockfish | 77 | 76 | 51 | 51 | 51 |
| Canary Rockfish | 65 | 64 | 26 | 26 | 26 |
| Blackspotted Rockfish | 24 | 24 | 21 | 21 | 21 |
| Bocaccio | 24 | 24 | 11 | 11 | 11 |
| Yellowmouth Rockfish | 12 | 9 | 10 | 10 | 10 |
| China Rockfish | 6 | 6 | 6 | 6 | 6 |
| Copper Rockfish | 2 | 2 | 2 | 2 | 2 |
| Greenstriped Rockfish | 2 | 2 | 0 | 0 | 0 |
| Rosethorn Rockfish | 1 | 1 | 0 | 0 | 0 |
| **All rockfish** | **4112** | **4044** | **3545** | **3544** | **3562** |

Table 7. Summary of rockfish (round) fork length in centimetres of all rockfishes for entire BC coast (IPHC area 2B) and by PSMFC Area.

| | Blackspotted Rockfish | | | | | Bocaccio | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 46 | 41 | 47 | 41 | 47 | 71 | 71 | 71 | 71 | 70 |
| Standard Error | 0.65 | - | 0.74 | 0.33 | 0.97 | 1.24 | 2.83 | 2.21 | 0.88 | 1.55 |
| Median | 46 | 41 | 46 | 41 | 48 | 71 | 69 | 72 | 71 | 69 |
| Mode | 45 | 41 | 45 | 41 | 45,50 | 74 | >3 values | 78 | 69,71,72 | >3 values |
| Standard Deviation | 3.17 | - | 2.67 | 0.58 | 2.56 | 6.06 | 8.01 | 6.63 | 1.53 | 3.11 |
| Sample Variance | 10.03 | - | 7.10 | 0.33 | 6.57 | 36.72 | 64.21 | 44.00 | 2.33 | 9.67 |
| Minimum | 41 | 41 | 43 | 41 | 44 | 62 | 63 | 62 | 69 | 67 |
| Maximum | 53 | 41 | 53 | 42 | 50 | 88 | 88 | 79 | 72 | 74 |
| Range | 12 | 0 | 10 | 1 | 6 | 26 | 25 | 17 | 3 | 7 |
| Count | 24 | 1 | 13 | 3 | 7 | 24 | 8 | 9 | 3 | 4 |

| | Canary Rockfish | | | | | China Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 49 | 48 | 51 | 49 | 48 | 34 | 35 | 36 | 34 | - |
| Standard Error | 0.58 | 1.12 | 1.10 | 1.14 | 1.05 | 0.80 | - | - | 1.11 | - |
| Median | 48 | 47 | 52 | 48 | 47 | 35 | 35 | 36 | 34 | - |
| Mode | >3 values | 45 | 48,52 | 46 | 47 | 35,36 | 35 | 36 | >3 values | - |
| Standard Deviation | 4.65 | 5.24 | 3.66 | 4.11 | 4.58 | 1.97 | - | - | 2.22 | - |
| Sample Variance | 21.66 | 27.47 | 13.42 | 16.90 | 21.00 | 3.87 | - | - | 4.92 | - |
| Minimum | 38 | 39 | 45 | 42 | 38 | 31 | 35 | 36 | 31 | - |
| Maximum | 57 | 57 | 57 | 55 | 55 | 36 | 35 | 36 | 36 | - |
| Range | 19 | 18 | 12 | 13 | 17 | 5 | 0 | 0 | 5 | - |
| Count | 65 | 22 | 11 | 13 | 19 | 6 | 1 | 1 | 4 | - |

| | Copper Rockfish | | | | | Greenstriped Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 39 | 41 | 37 | - | - | 34 | 32 | 35 | - | - |
| Standard Error | 2.00 | - | - | - | - | 1.50 | - | - | - | - |
| Median | 39 | 41 | 37 | - | - | 34 | 32 | 35 | - | - |
| Mode | 37,41 | 41 | 37 | - | - | 32,35 | 32 | 35 | - | - |
| Standard Deviation | 2.83 | - | - | - | - | 2.12 | - | - | - | - |
| Sample Variance | 8.00 | - | - | - | - | 4.50 | - | - | - | - |
| Minimum | 37 | 41 | 37 | - | - | 32 | 32 | 35 | - | - |
| Maximum | 41 | 41 | 37 | - | - | 35 | 32 | 35 | - | - |
| Range | 4 | 0 | 0 | - | - | 3 | 0 | 0 | - | - |
| Count | 2 | 1 | 1 | - | - | 2 | 1 | 1 | - | - |

| | Quillback Rockfish | | | | | Redbanded Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 39 | 39 | 40 | 39 | 37 | 50 | 49 | 50 | 51 | 48 |
| Standard Error | 0.22 | 0.33 | 0.65 | 0.42 | 0.43 | 0.12 | 0.34 | 0.22 | 0.17 | 0.47 |
| Median | 39 | 39 | 39 | 39 | 37 | 50 | 49 | 50 | 51 | 48 |
| Mode | 38 | 38 | 39 | 38 | 35 | 52 | 49 | 48 | 52 | 49 |
| Standard Deviation | 2.90 | 2.66 | 2.83 | 2.85 | 3.00 | 5.40 | 4.74 | 5.63 | 5.17 | 5.28 |
| Sample Variance | 8.43 | 7.05 | 8.04 | 8.10 | 9.03 | 29.15 | 22.46 | 31.74 | 26.69 | 27.92 |
| Minimum | 30 | 32 | 34 | 30 | 31 | 32 | 36 | 33 | 32 | 36 |
| Maximum | 47 | 44 | 45 | 47 | 44 | 68 | 64 | 64 | 68 | 62 |
| Range | 17 | 12 | 11 | 17 | 13 | 36 | 28 | 31 | 36 | 26 |
| Count | 177 | 63 | 19 | 46 | 49 | 1889 | 200 | 658 | 904 | 127 |

Table 7 continued on next page.

Table 7 continued

| | Rosethorn Rockfish | | | | | Rougheye Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 29 | 29 | - | - | - | 51 | 50 | 50 | 54 | 49 |
| Standard Error | - | - | - | - | - | 0.30 | 2.08 | 1.33 | 0.53 | 0.31 |
| Median | 29 | 29 | - | - | - | 50 | 51 | 49 | 54 | 49 |
| Mode | 29 | 29 | - | - | - | 47 | 51,56 | 53 | 54 | 47 |
| Standard Deviation | - | - | - | - | - | 5.68 | 5.87 | 6.65 | 5.70 | 4.65 |
| Sample Variance | - | - | - | - | - | 32.27 | 34.50 | 44.17 | 32.55 | 21.62 |
| Minimum | 29 | 29 | - | - | - | 39 | 40 | 39 | 42 | 40 |
| Maximum | 29 | 29 | - | - | - | 74 | 56 | 67 | 74 | 66 |
| Range | 0 | 0 | - | - | - | 35 | 16 | 28 | 32 | 26 |
| Count | 1 | 1 | - | - | - | 368 | 8 | 25 | 114 | 221 |

| | Shortraker Rockfish | | | | | Silvergray Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 59 | 64 | 56 | 69 | 58 | 55 | 54 | 55 | 57 | 53 |
| Standard Error | 1.02 | 5.74 | 1.33 | 1.87 | 1.80 | 0.48 | 0.85 | 0.67 | 1.38 | 0.92 |
| Median | 56 | 62 | 55 | 70 | 55 | 54 | 54 | 55 | 57 | 53 |
| Mode | 51 | >3 values | 50,55 | 73 | 51 | 53 | 53,54 | 56 | >3 values | 53 |
| Standard Deviation | 11.01 | 12.83 | 10.12 | 7.24 | 11.10 | 4.24 | 2.70 | 3.83 | 5.17 | 4.12 |
| Sample Variance | 121.32 | 164.70 | 102.44 | 52.35 | 123.20 | 18.01 | 7.29 | 14.70 | 26.75 | 17.01 |
| Minimum | 40 | 51 | 40 | 59 | 42 | 45 | 50 | 47 | 48 | 45 |
| Maximum | 95 | 78 | 95 | 85 | 82 | 68 | 59 | 62 | 68 | 59 |
| Range | 55 | 27 | 55 | 26 | 40 | 23 | 9 | 15 | 20 | 14 |
| Count | 116 | 5 | 58 | 15 | 38 | 77 | 10 | 33 | 14 | 20 |

| | Yelloweye Rockfish | | | | | Yellowmouth Rockfish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All Areas | 3C/D, 5A | 5B | 5C/D | 5E | All Areas | 3C/D, 5A | 5B | 5C/D | 5E |
| Mean | 55 | 55 | 54 | 56 | 55 | 43 | 45 | 43 | - | - |
| Standard Error | 0.16 | 0.32 | 0.24 | 0.36 | 0.58 | 0.71 | - | 0.76 | - | - |
| Median | 54 | 55 | 54 | 55 | 56 | 43 | 45 | 43 | - | - |
| Mode | 53 | 55 | 53 | 53 | 56 | 43 | 45 | 43 | - | - |
| Standard Deviation | 6.01 | 5.68 | 5.88 | 6.03 | 7.01 | 2.46 | - | 2.52 | - | - |
| Sample Variance | 36.14 | 32.24 | 34.57 | 36.36 | 49.21 | 6.06 | - | 6.36 | - | - |
| Minimum | 31 | 40 | 35 | 43 | 31 | 40 | 45 | 40 | - | - |
| Maximum | 73 | 73 | 71 | 73 | 69 | 49 | 45 | 49 | - | - |
| Range | 42 | 33 | 36 | 30 | 38 | 9 | 0 | 9 | - | - |
| Count | 1349 | 319 | 602 | 281 | 147 | 12 | 1 | 11 | - | - |

Table 8. Sexual maturity, assessed visually, for male and female rockfish species showing the number (proportion) of fish in each maturity stage and the total number of fish sampled.

| MALE | Proportion of Individuals in Each Maturity Stage | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| ROCKFISH | Immature | Maturing | Developing | Developed | Running | Spent | Resting | N |
| Blackspotted | 0.17 | 0.67 | 0.17 | | | | | 6 |
| Bocaccio | | | 0.25 | 0.75 | | | | 8 |
| Canary | | 0.22 | | 0.67 | | 0.11 | | 9 |
| China | | | | | | 0.67 | 0.33 | 3 |
| Copper | | | | 1.00 | | | | 1 |
| Quillback | | 0.18 | 0.16 | 0.16 | 0.01 | 0.20 | 0.29 | 91 |
| Redbanded | | 0.07 | 0.22 | 0.65 | 0.00 | 0.04 | 0.03 | 667 |
| Rougheye | 0.01 | 0.16 | 0.10 | 0.64 | | 0.06 | 0.03 | 178 |
| Shortraker | | 0.07 | 0.11 | 0.69 | | 0.04 | 0.09 | 45 |
| Silvergray | | 0.13 | 0.08 | 0.04 | | 0.21 | 0.54 | 24 |
| Yelloweye | 0.02 | 0.22 | 0.25 | 0.12 | 0.00 | 0.34 | 0.05 | 741 |
| Yellowmouth | | | 0.13 | 0.75 | | 0.13 | | 8 |
| All Rockfish | 0.01 | 0.15 | 0.21 | 0.39 | 0.00 | 0.18 | 0.06 | 1781 |

| FEMALE | Proportion of Individuals in Each Maturity Stage | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| ROCKFISH | Immature | Maturing | Mature | Fertilized | Larvae | Spent | Resting | N |
| Blackspotted | 0.07 | 0.80 | 0.13 | | | | | 15 |
| Bocaccio | | | | | | 1.00 | | 3 |
| Canary | | 0.47 | 0.47 | | | | 0.06 | 17 |
| China | | | | | 0.33 | 0.33 | 0.33 | 3 |
| Copper | | | | | | | 1.00 | 1 |
| Quillback | 0.01 | 0.14 | 0.16 | 0.02 | 0.02 | 0.41 | 0.23 | 86 |
| Redbanded | 0.00 | 0.08 | 0.05 | 0.01 | 0.02 | 0.70 | 0.15 | 905 |
| Rougheye | 0.01 | 0.32 | 0.06 | 0.01 | | 0.40 | 0.21 | 167 |
| Shortraker | | 0.21 | 0.21 | | | 0.42 | 0.16 | 19 |
| Silvergray | | 0.04 | 0.04 | | 0.07 | 0.63 | 0.22 | 27 |
| Yelloweye | 0.04 | 0.09 | 0.05 | 0.04 | 0.10 | 0.55 | 0.13 | 518 |
| Yellowmouth | | | 0.50 | | | | 0.50 | 2 |
| All Rockfish | 0.01 | 0.12 | 0.06 | 0.02 | 0.04 | 0.59 | 0.15 | 1763 |

Table 9. Summary statistics by PSMFC Area groupings for Yelloweye Rockfish age data collected on the IPHC 2009 SSA Survey.

| Male and Female Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 35.8 | 36.4 | 35.1 | 35.6 | 39.5 |
| Standard Error | 0.47 | 0.90 | 0.66 | 1.07 | 2.44 |
| Median | 30.0 | 30.0 | 29.0 | 31.0 | 34.0 |
| Mode | 27 | 29 | 27 | 26 | 28 |
| Standard Deviation | 15.71 | 16.03 | 14.98 | 16.23 | 17.97 |
| Sample Variance | 246.66 | 256.94 | 224.44 | 263.54 | 322.78 |
| Minimum | 12 | 12 | 14 | 14 | 16 |
| Maximum | 115 | 100 | 104 | 115 | 96 |
| Count | 1121 | 316 | 519 | 232 | 54 |

| Male Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 33.9 | 32.8 | 34.3 | 33.4 | 39.9 |
| Minimum | 14 | 14 | 17 | 14 | 19 |
| Maximum | 96 | 78 | 96 | 87 | 80 |
| Count | 672 | 215 | 289 | 135 | 33 |

| Female Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 38.7 | 44.1 | 36.2 | 38.8 | 38.8 |
| Minimum | 12 | 12 | 14 | 14 | 16 |
| Maximum | 115 | 100 | 104 | 115 | 96 |
| Count | 449 | 101 | 230 | 97 | 21 |

Table 10. Summary statistics by PSMFC Area groupings for Quillback Rockfish age data collected on the IPHC 2009 SSA Survey.

| Male and Female Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 33.3 | 31.1 | 28.8 | 33.3 | 37.8 |
| Standard Error | 0.95 | 1.40 | 2.16 | 2.18 | 1.75 |
| Median | 31.0 | 28.0 | 27.0 | 29.5 | 35.0 |
| Mode | 25,33 | 26 | 25 | 21,27,29 | 33 |
| Standard Deviation | 12.61 | 11.14 | 9.42 | 14.75 | 12.28 |
| Sample Variance | 159.13 | 124.03 | 88.70 | 217.71 | 150.83 |
| Minimum | 13 | 13 | 14 | 13 | 19 |
| Maximum | 70 | 65 | 50 | 70 | 61 |
| Count | 177 | 63 | 19 | 46 | 49 |

| Male Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 34.0 | 30.1 | 31.4 | 33.3 | 38.2 |
| Minimum | 13 | 15 | 25 | 13 | 19 |
| Maximum | 70 | 65 | 50 | 70 | 61 |
| Count | 91 | 30 | 5 | 22 | 34 |

| Female Ages (years) | ALL AREAS | 3C/D, 5A | 5B | 5C/D | 5E |
|---|---|---|---|---|---|
| Mean | 32.5 | 32.0 | 27.9 | 33.2 | 36.9 |
| Minimum | 13 | 13 | 14 | 15 | 20 |
| Maximum | 62 | 61 | 43 | 62 | 61 |
| Count | 86 | 33 | 14 | 24 | 15 |

Table 11. Summary of rockfish catch rate (numbers of fish per 100 hooks, non-zero catches) for entire BC coast (IPHC area 2B) and by PSMFC Area grouping.

| All Areas (170 sets) | Black-spotted | Bocaccio | Canary | China | Copper | Green-striped | Quillback | Red-banded |
|---|---|---|---|---|---|---|---|---|
| Mean | 0.553 | 0.212 | 0.473 | 0.283 | 0.140 | 0.140 | 0.924 | 3.670 |
| Median | 0.145 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.715 | 1.875 |
| Standard Deviation | 0.681 | 0.149 | 0.589 | 0.248 | 0.000 | 0.000 | 1.044 | 4.277 |
| Sample Variance | 0.464 | 0.022 | 0.346 | 0.062 | 0.000 | 0.000 | 1.090 | 18.292 |
| Minimum | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 |
| Maximum | 1.760 | 0.720 | 2.300 | 0.570 | 0.140 | 0.140 | 5.130 | 23.320 |
| Positive Catch Rate | 0.035 | 0.094 | 0.118 | 0.018 | 0.012 | 0.012 | 0.165 | 0.447 |
| **3C/D, 5A (54 Sets)** | | | | | | | | |
| Mean | | 0.161 | 0.431 | 0.140 | 0.140 | 0.140 | 0.862 | 2.115 |
| Median | | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.720 | 1.165 |
| Standard Deviation | | 0.057 | 0.562 | | | | 0.834 | 2.703 |
| Sample Variance | | 0.003 | 0.316 | | | | 0.696 | 7.308 |
| Minimum | | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 |
| Maximum | | 0.290 | 1.600 | 0.140 | 0.140 | 0.140 | 3.040 | 8.510 |
| Positive Catch Rate | 0.000 | 0.130 | 0.148 | 0.019 | 0.019 | 0.019 | 0.204 | 0.259 |
| **5B (50 Sets)** | | | | | | | | |
| Mean | 0.950 | 0.320 | 0.282 | | | 0.140 | 0.680 | 3.086 |
| Median | 0.950 | 0.210 | 0.140 | | | 0.140 | 0.430 | 1.590 |
| Standard Deviation | 1.146 | 0.275 | 0.247 | | | | 0.745 | 3.390 |
| Sample Variance | 1.312 | 0.075 | 0.061 | | | | 0.555 | 11.489 |
| Minimum | 0.140 | 0.140 | 0.140 | | | 0.140 | 0.140 | 0.140 |
| Maximum | 1.760 | 0.720 | 0.710 | | | 0.140 | 1.720 | 16.440 |
| Positive Catch Rate | 0.040 | 0.080 | 0.100 | 0.000 | 0.000 | 0.020 | 0.080 | 0.640 |
| **5C/D (56 Sets)** | | | | | | | | |
| Mean | 0.143 | 0.140 | 0.468 | 0.140 | 0.140 | | 0.726 | 4.888 |
| Median | 0.140 | 0.140 | 0.355 | 0.140 | 0.140 | | 0.560 | 3.500 |
| Standard Deviation | 0.006 | 0.000 | 0.386 | | | | 0.469 | 5.390 |
| Sample Variance | 0.000 | 0.000 | 0.149 | | | | 0.220 | 29.055 |
| Minimum | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | | 0.140 | 0.140 |
| Maximum | 0.150 | 0.140 | 1.020 | 0.140 | 0.140 | | 1.440 | 23.320 |
| Positive Catch Rate | 0.054 | 0.054 | 0.071 | 0.018 | 0.018 | 0.000 | 0.161 | 0.482 |
| **5E (10 Sets)** | | | | | | | | |
| Mean | 0.990 | 0.280 | 0.907 | 0.570 | | | 1.783 | 6.190 |
| Median | 0.990 | 0.280 | 0.280 | 0.570 | | | 0.930 | 6.680 |
| Standard Deviation | | 0.000 | 1.209 | | | | 2.270 | 5.541 |
| Sample Variance | | 0.000 | 1.461 | | | | 5.151 | 30.706 |
| Minimum | 0.990 | 0.280 | 0.140 | 0.570 | | | 0.140 | 0.420 |
| Maximum | 0.990 | 0.280 | 2.300 | 0.570 | | | 5.130 | 11.470 |
| Positive Catch Rate | 0.100 | 0.200 | 0.300 | 0.100 | 0.000 | 0.000 | 0.400 | 0.300 |

Table 11 continued on next page…

Table 11 continued

| All Areas (170 sets) | Rosethorn | Rougheye | Shortraker | Silvergray | Tiger | Vermilion | Yelloweye | Yellow-mouth |
|---|---|---|---|---|---|---|---|---|
| Mean | 0.140 | 2.449 | 1.056 | 0.377 | 0.140 | 0.140 | 2.710 | 0.295 |
| Median | 0.140 | 0.585 | 0.285 | 0.140 | 0.140 | 0.140 | 1.295 | 0.160 |
| Standard Deviation | | 4.469 | 1.910 | 0.382 | | | 3.610 | 0.292 |
| Sample Variance | | 19.976 | 3.648 | 0.146 | | | 13.033 | 0.086 |
| Minimum | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 |
| Maximum | 0.140 | 16.470 | 8.280 | 1.850 | 0.140 | 0.140 | 17.440 | 0.880 |
| Positive Catch Rate | 0.012 | 0.118 | 0.118 | 0.176 | 0.006 | 0.006 | 0.435 | 0.035 |
| **3C/D, 5A (54 Sets)** | | | | | | | | |
| Mean | 0.140 | 0.885 | 0.440 | 0.238 | 0.140 | 0.140 | 1.898 | 0.140 |
| Median | 0.140 | 0.885 | 0.440 | 0.215 | 0.140 | 0.140 | 0.720 | 0.140 |
| Standard Deviation | | 0.841 | | 0.119 | | | 2.312 | |
| Sample Variance | | 0.708 | | 0.014 | | | 5.346 | |
| Minimum | 0.140 | 0.290 | 0.440 | 0.140 | 0.140 | 0.140 | 0.140 | 0.140 |
| Maximum | 0.140 | 1.480 | 0.440 | 0.430 | 0.140 | 0.140 | 8.020 | 0.140 |
| Positive Catch Rate | 0.019 | 0.037 | 0.019 | 0.111 | 0.019 | 0.019 | 0.463 | 0.019 |
| **5B (43 Sets)** | | | | | | | | |
| Mean | | 0.469 | 0.906 | 0.492 | | | 4.380 | 0.326 |
| Median | | 0.430 | 0.580 | 0.505 | | | 2.180 | 0.180 |
| Standard Deviation | | 0.389 | 1.030 | 0.332 | | | 5.444 | 0.316 |
| Sample Variance | | 0.151 | 1.062 | 0.110 | | | 29.638 | 0.100 |
| Minimum | | 0.140 | 0.140 | 0.140 | | | 0.140 | 0.140 |
| Maximum | | 1.310 | 3.190 | 0.870 | | | 17.440 | 0.880 |
| Positive Catch Rate | | 0.160 | 0.180 | 0.200 | | | 0.420 | 0.100 |
| **5C/D (62 Sets)** | | | | | | | | |
| Mean | | 1.267 | 1.108 | 0.248 | | | 1.824 | |
| Median | | 1.140 | 0.140 | 0.140 | | | 0.430 | |
| Standard Deviation | | 1.328 | 2.692 | 0.249 | | | 2.328 | |
| Sample Variance | | 1.763 | 7.244 | 0.062 | | | 5.419 | |
| Minimum | | 0.140 | 0.140 | 0.140 | | | 0.140 | |
| Maximum | | 4.000 | 8.280 | 0.850 | | | 8.600 | |
| Positive Catch Rate | | 0.125 | 0.161 | 0.143 | | | 0.393 | |
| **5E (10 Sets)** | | | | | | | | |
| Mean | 0.140 | 11.530 | 2.560 | 0.497 | | | 3.498 | |
| Median | 0.140 | 13.370 | 2.560 | 0.210 | | | 3.925 | |
| Standard Deviation | | 6.073 | | 0.673 | | | 2.021 | |
| Sample Variance | | 36.879 | | 0.453 | | | 4.083 | |
| Minimum | 0.140 | 4.750 | 2.560 | 0.140 | | | 0.140 | |
| Maximum | 0.140 | 16.470 | 2.560 | 1.850 | | | 5.700 | |
| Positive Catch Rate | 0.100 | 0.300 | 0.100 | 0.600 | | | 0.600 | |

Table 12. Catch data summary for Quillback, Yelloweye, Redbanded and Rougheye rockfishes caught on the IPHC SSA survey from 2003 to 2009, for all stations fished. For each year, the number of stations fished, the total number of hooks fished, the number of fish caught, the positive catch rate, and the $\log_2$ median catch rates (#fish/100 hooks) of the non-zero catches are reported.

| | | | Redbanded Rockfish | | | Yelloweye Rockfish | | | Rougheye Rockfish | | | Quillback Rockfish | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | # Stations with data | # Hooks | Number Caught | Positive Catch Rate | $\log_2$(Median) | Number Caught | Positive Catch Rate | $\log_2$(Median) | Number Caught | Positive Catch Rate | $\log_2$(Median) | Number Caught | Positive Catch Rate | $\log_2$(Median) |
| 2003 | 170 | 134,868 | 1,295 | 41.8 | 0.333 | 1210 | 41.8 | -0.184 | 286 | 12.9 | -1.184 | 154 | 17.6 | -1.396 |
| 2004 | 170 | 133,212 | 1,972 | 43.5 | 0.978 | 1522 | 40.6 | 0.595 | 458 | 17.1 | -0.168 | 138 | 13.5 | -2.000 |
| 2005 | 170 | 117,947 | 1,568 | 44.7 | 1.000 | 1168 | 40.6 | 0.506 | 536 | 15.9 | -0.811 | 295 | 15.3 | -0.234 |
| 2006 | 170 | 100,423 | 1,270 | 41.2 | 0.824 | 995 | 38.2 | 0.043 | 215 | 10.6 | -0.234 | 195 | 17.1 | -0.578 |
| 2007 | 170 | 83,637 | 724 | 38.8 | 0.491 | 688 | 32.4 | 0.536 | 117 | 11.2 | -2.252 | 121 | 13.5 | -0.304 |
| 2008 | 169 | 82,770 | 1,137 | 42.6 | 0.795 | 830 | 38.5 | 0.029 | 276 | 14.2 | -0.128 | 88 | 14.2 | -0.713 |
| 2009 | 170 | 117,106 | 1,910 | 44.7 | 0.907 | 1358 | 43.5 | 0.384 | 366 | 13.5 | -0.786 | 181 | 16.5 | -0.474 |

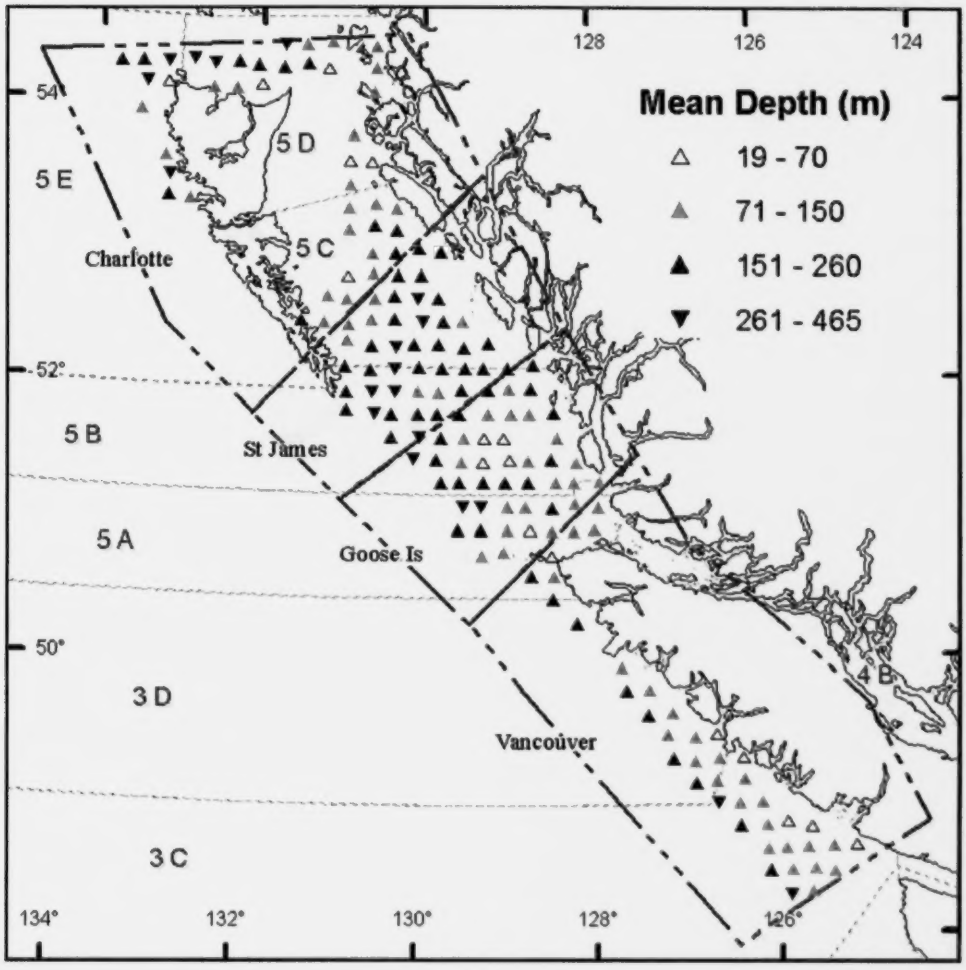



Figure 1. 2009 IPHC SSA survey stations grouped by mean depth of fishing in metres showing IPHC regions (heavy dashed outline) and DFO Management Areas (light dash).

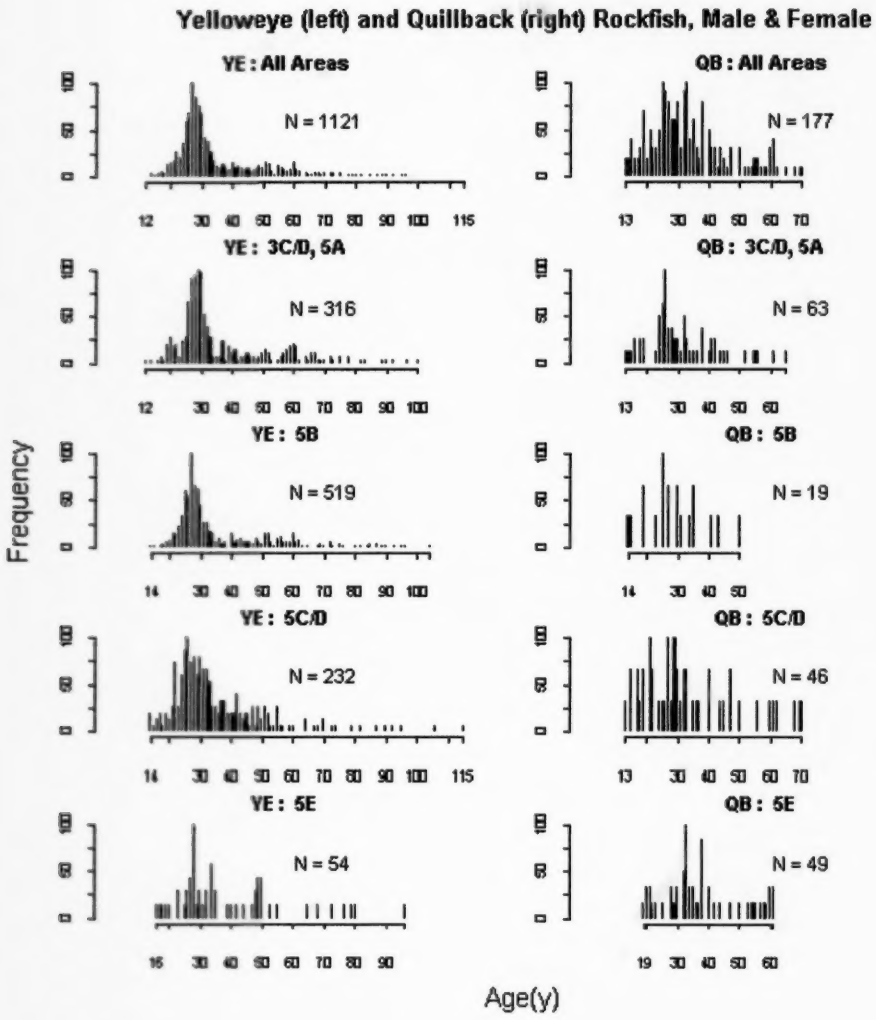



Figure 2. Age frequency histograms for all areas and by PSMFC Area for Yelloweye (left column) and Quillback Rockfish (right column), male and female combined, using data collected on the 2009 IPHC SSA Survey.

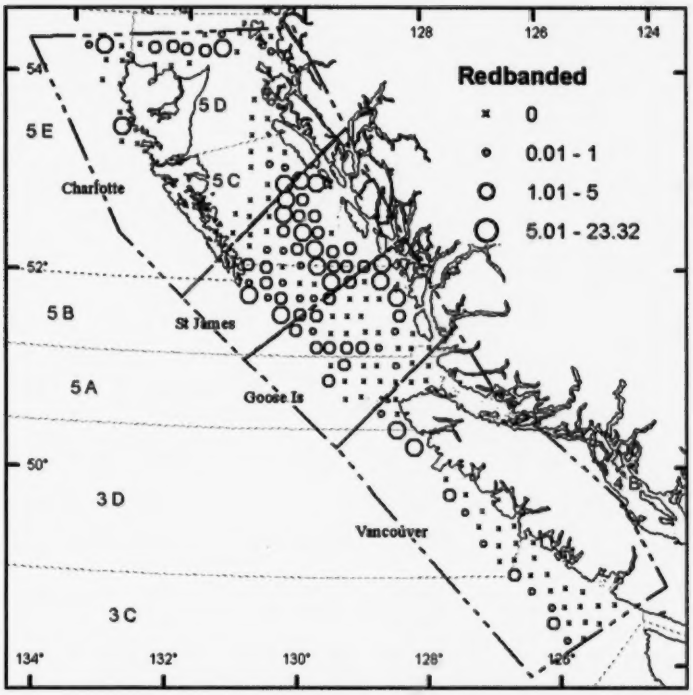



Figure 3 Catch rate of Redbanded Rockfish (in numbers of fish per 100 hooks) showing IPHC regions (heavy dashed outline) and DFO Management Areas (light dash).

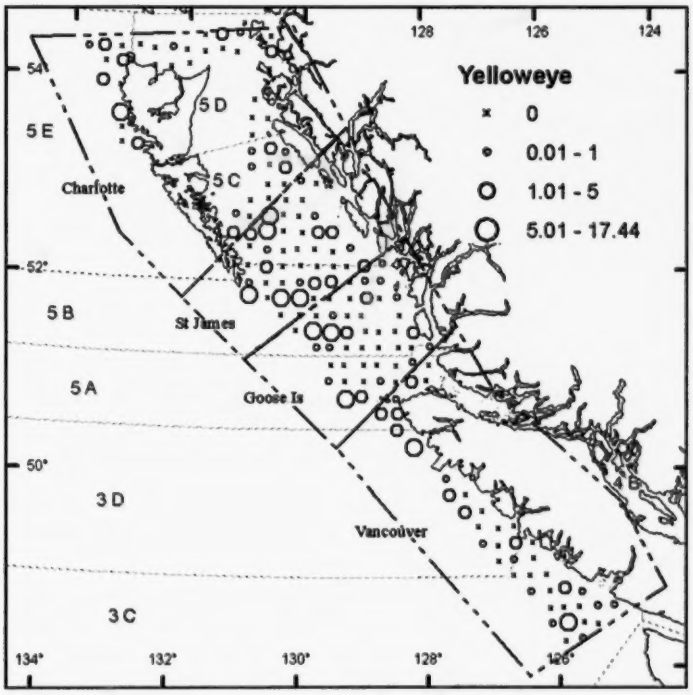



Figure 4. Catch rate of Yelloweye Rockfish (in numbers of fish per 100 hooks) showing IPHC regions (heavy dashed outline) and DFO Management Areas (light dash).

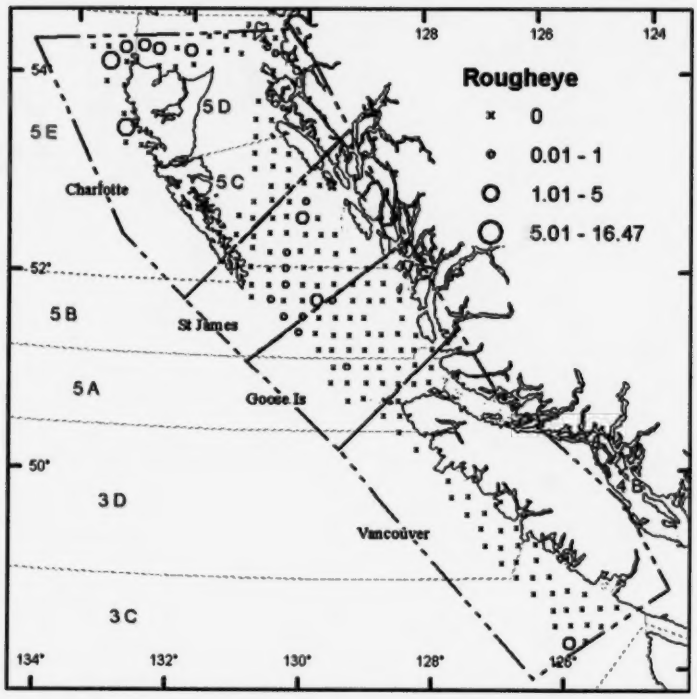



Figure 5. Catch rate of Rougheye Rockfish (in numbers of fish per 100 hooks) showing IPHC regions (heavy dashed outline) and DFO Management Areas (light dash).

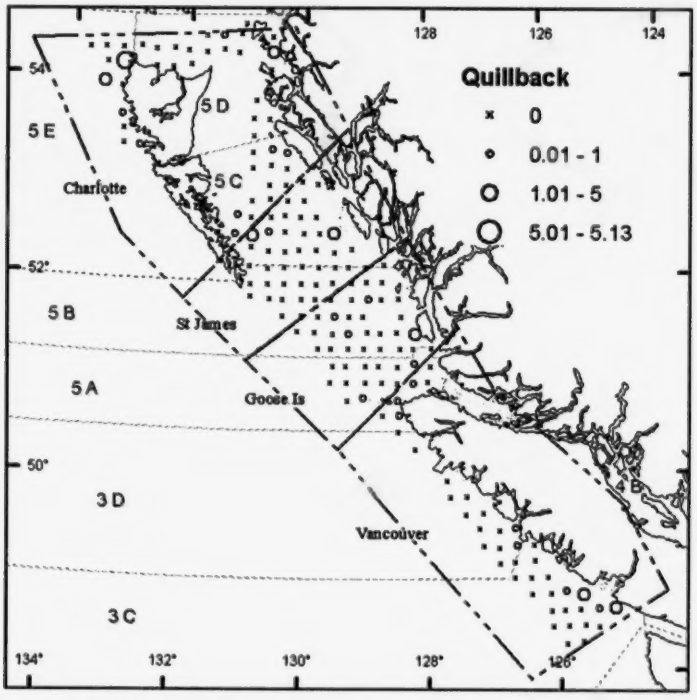



Figure 6. Catch rate of Quillback Rockfish (in numbers of fish per 100 hooks) showing IPHC regions (heavy dashed outline) and DFO Management Areas (light dash).

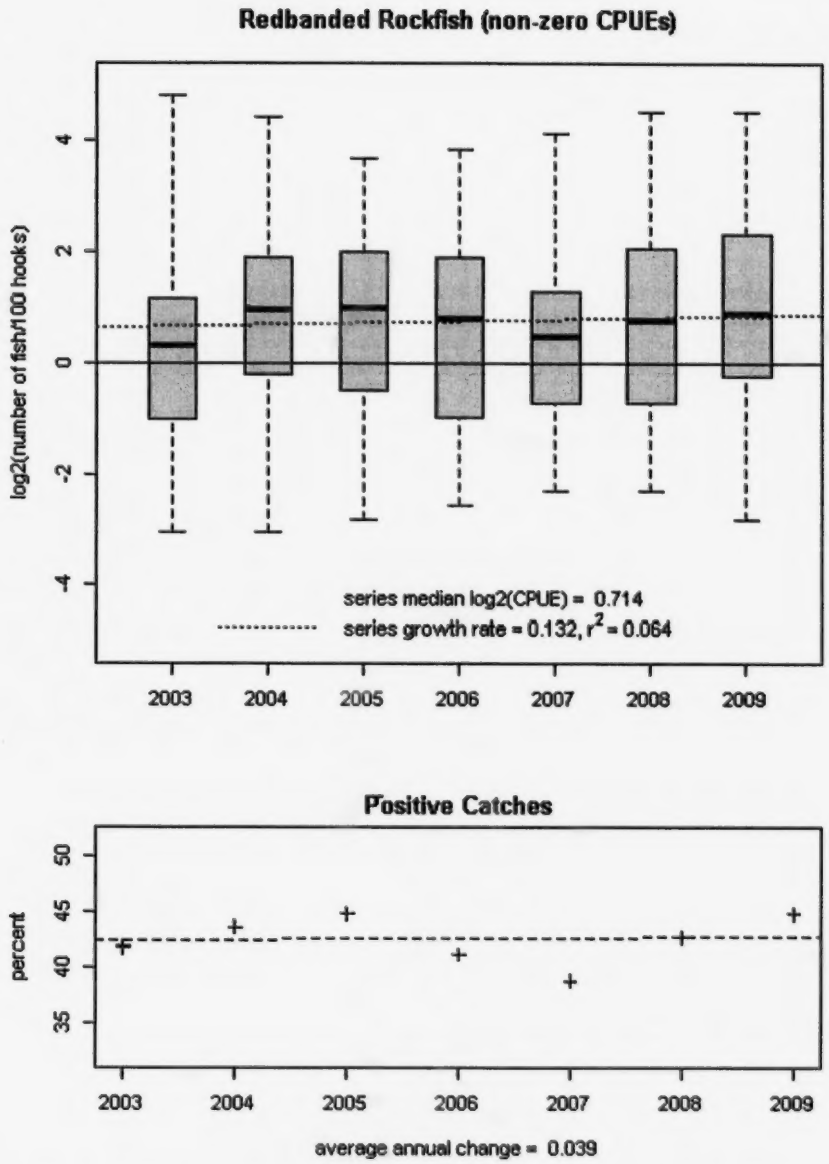



Figure 7. Upper panel: Relative abundance index ($\log_2$ (number of fish/100 hooks)) for non-zero catches of Redbanded Rockfish from 2003 to 2009. Boxplots summarize annual non-zero data with a box for the upper (3rd quartile) and lower (1st quartile) hinges of the data, a bar for the median, and whiskers for the extremes of the data. Below the boxplots the series median $\log_2$ (CPUE) value, the series growth rate value (shown as a dashed line) together with the $R^2$ value are presented. Lower panel: Percent of positive catches by year shown by the "+" symbol with a dashed regression line and the annual change presented below the graph.

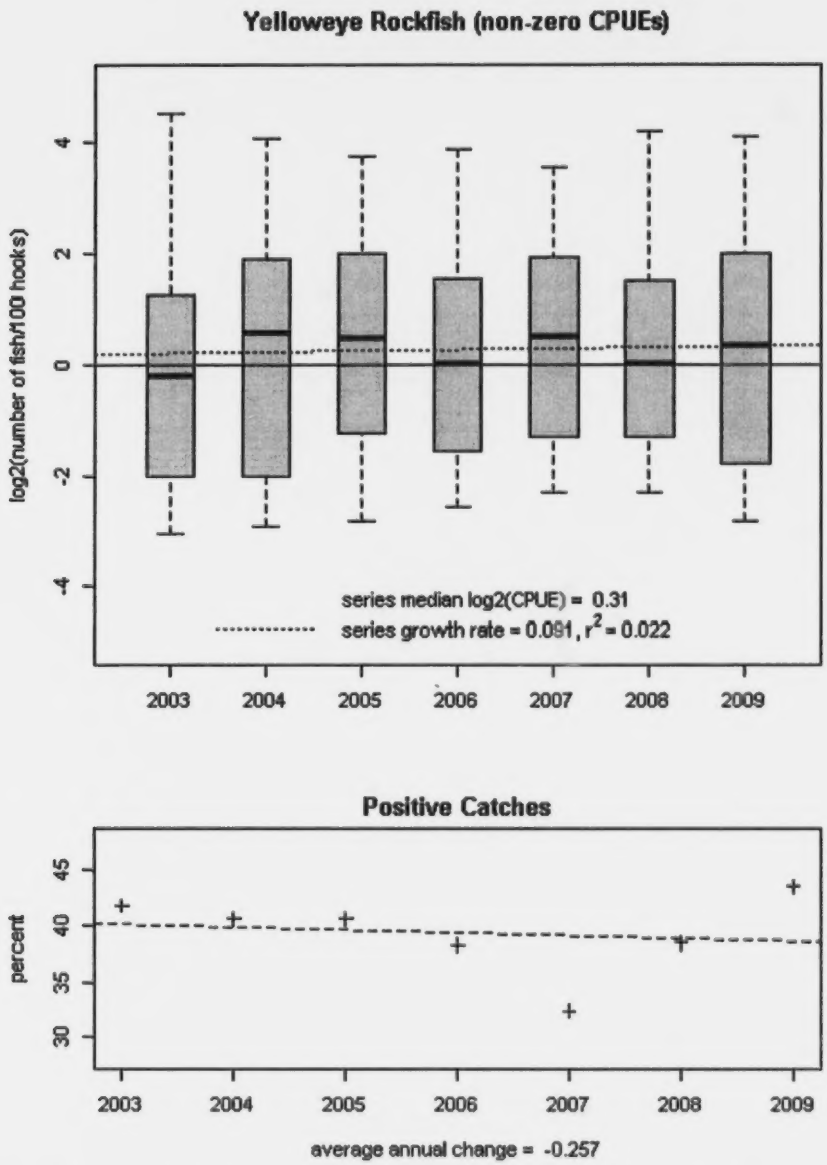



Figure 8. Upper panel: Relative abundance index ($\log_2$ (number of fish/100 hooks)) for non-zero catches of Yelloweye Rockfish from 2003 to 2009. Boxplots summarize annual non-zero data with a box for the upper (3rd quartile) and lower (1st quartile) hinges of the data, a bar for the median, and whiskers for the extremes of the data. Below the boxplots the series median $\log_2$ (CPUE) value, the series growth rate value (shown as a dashed line) together with the $R^2$ value are presented. Lower panel: Percent of positive catches by year shown by the "+" symbol with a dashed regression line and the annual change presented below the graph.

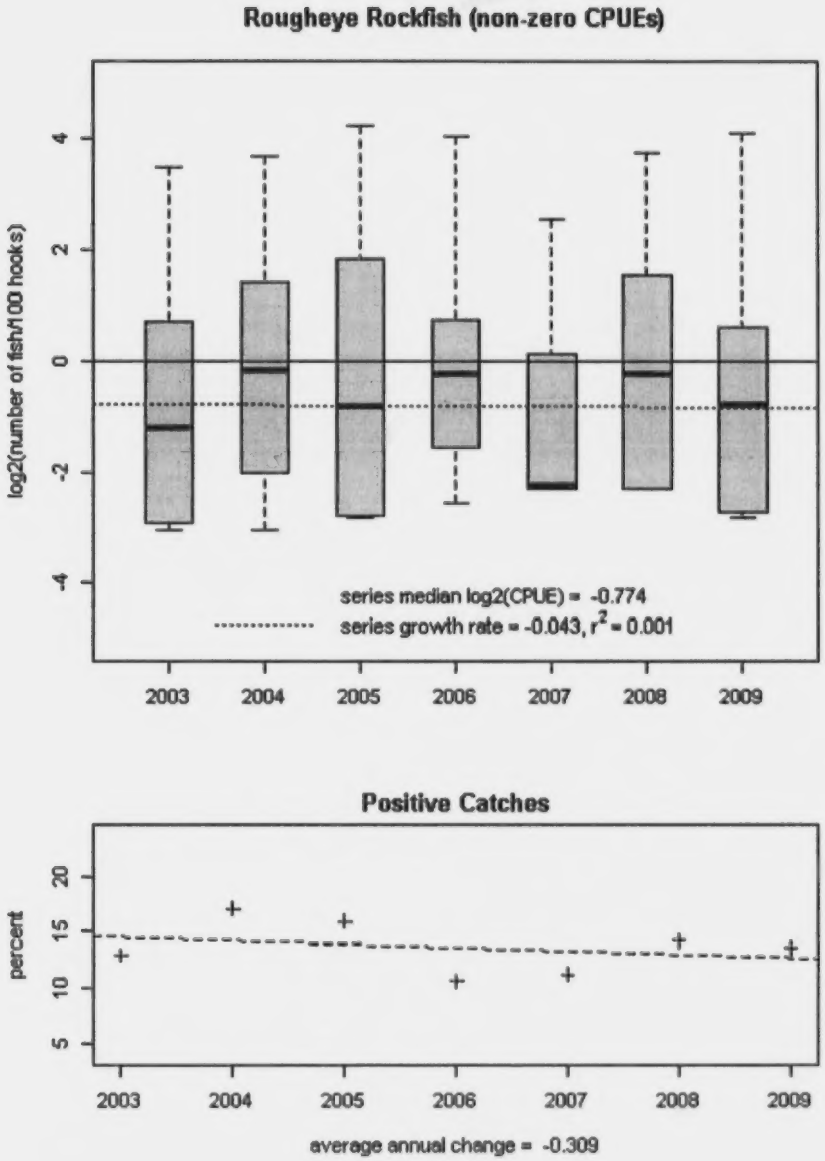



Figure 9. Upper panel: Relative abundance index (log2 (number of fish/100 hooks)) for non-zero catches of Rougheye Rockfish from 2003 to 2009. Boxplots summarize annual non-zero data with a box for the upper (3rd quartile) and lower (1st quartile) hinges of the data, a bar for the median, and whiskers for the extremes of the data. Below the boxplots the series median log2 (CPUE) value, the series growth rate value (shown as a dashed line) together with the $R^2$ value are presented. Lower panel: Percent of positive catches by year shown by the "+" symbol with a dashed regression line and the annual change presented below the graph.

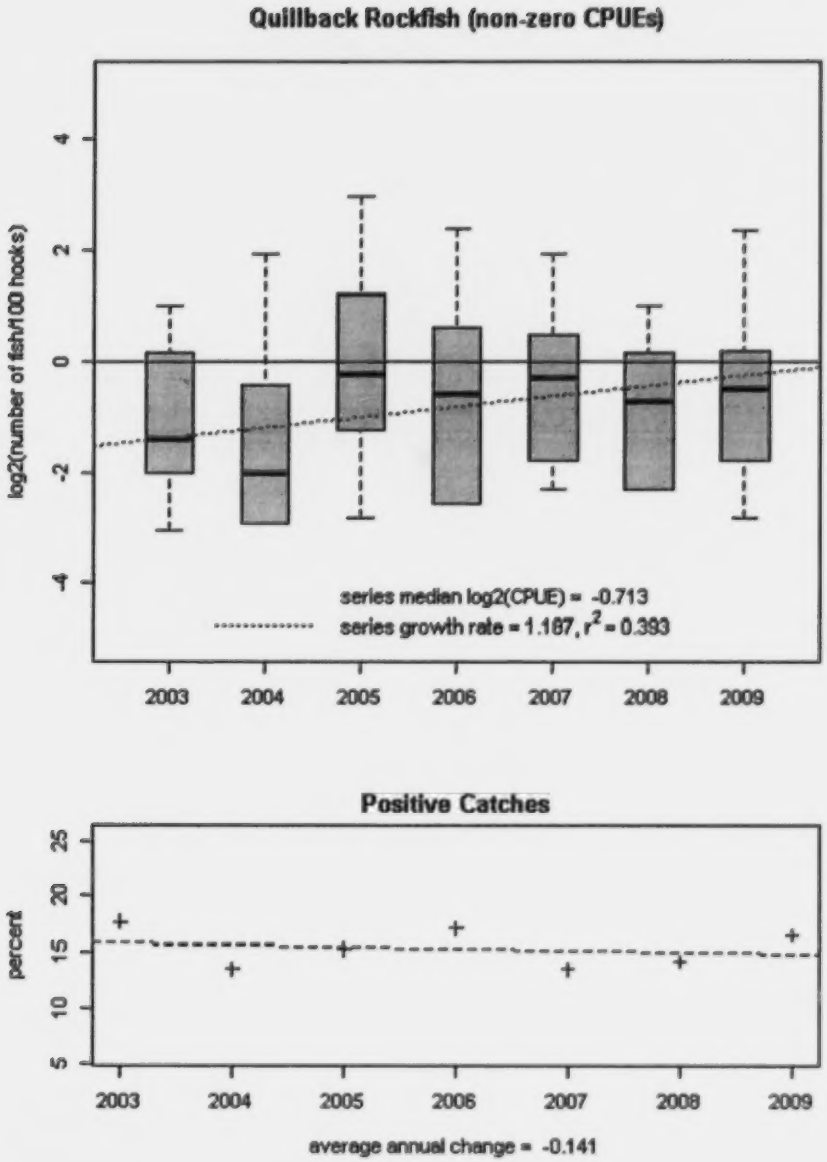
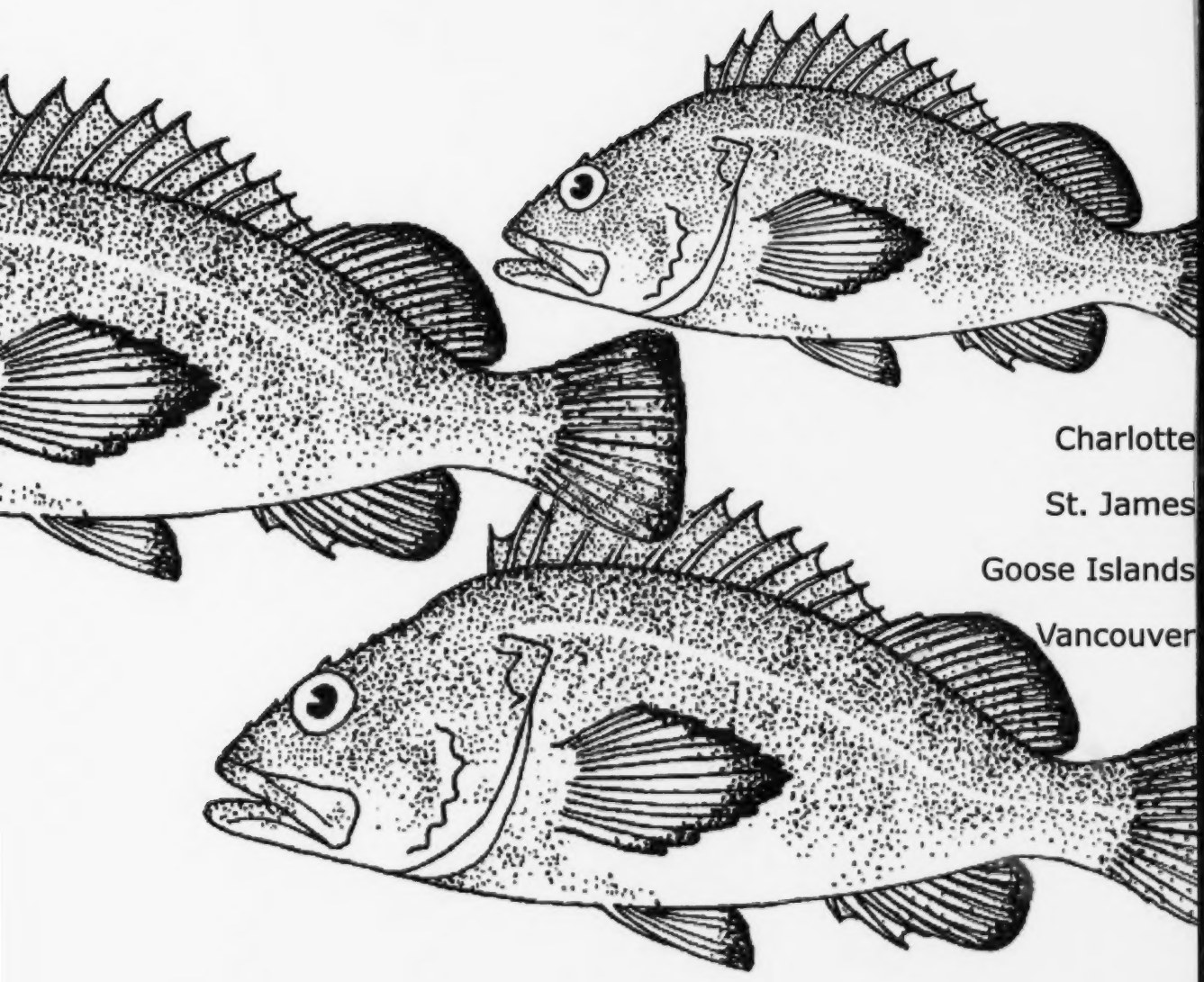



Figure 10. Upper panel: Relative abundance index ($log_2$ (number of fish/100 hooks)) for non-zero catches of Quillback Rockfish from 2003 to 2009. Boxplots summarize annual non-zero data with a box for the upper (3rd quartile) and lower (1st quartile) hinges of the data, a bar for the median, and whiskers for the extremes of the data. Below the boxplots the series median $log_2$ (CPUE) value, the series growth rate value (shown as a dashed line) together with the $R^2$ value are presented. Lower panel: Percent of positive catches by year shown by the "+" symbol with a dashed regression line and the annual change presented below the graph.

Appendix A. 2009 IPHC Survey Sampling Protocol

2009 Area 2B and SE Alaska bycatch sampling manual in pdf format.

# 2009 Protocols for Rockfish data collection in British Columbia



Charlotte

St. James

Goose Islands

Vancouver

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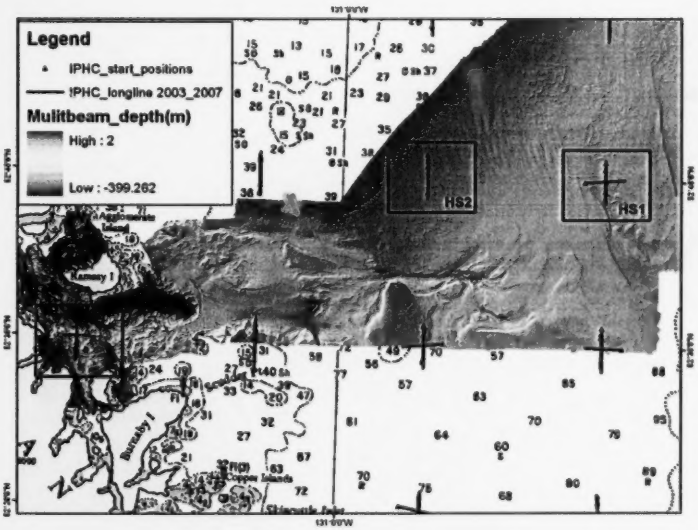
# INTRODUCTION

In 2009 the IPHC will collaborate with the Department of Oceans and Fisheries, Canada (DFO) to collect data about incidentally captured rockfish encountered during the Standardized Stock Assessment survey (SSA). Data will be collected from all charter regions in British Columbia.

Samplers will collect two distinct data sets: a whole-haul hook occupancy accounting and a suite of biological data from rockfish. A third IPHC sea sampler on these vessel will assist with data collection. One sampler will be focussed on collecting hook occupancy data, while the other two samplers will collect standard halibut survey data as well as sample rockfish as halibut sampling workload permits. Protocols have been developed so that rockfish can be sampled during the haul.

## *Changes from 2008*

In 2009, DFO will provide a Marel motion-compensated scale to collect round weights for a subsample of each species. Because in 2009 more gear will be hauled at each station, a reduced sampling protocol is available for times when rockfish sampling begins to impact halibut sampling. Samplers will also collect a both round and dressed lengths on a subsample of some species to establish a round to dressed conversion factor (CF) needed for the reduced sampling protocol. In 2008, no sets were subjected to reduced sampling, and that may be the case again in 2009. However, we feel it is important for data quality as well as team morale to have reduced sampling effort protocols available in case you really need to use them.



# Hook by Hook Occupancy Data Collection

## *Overview*

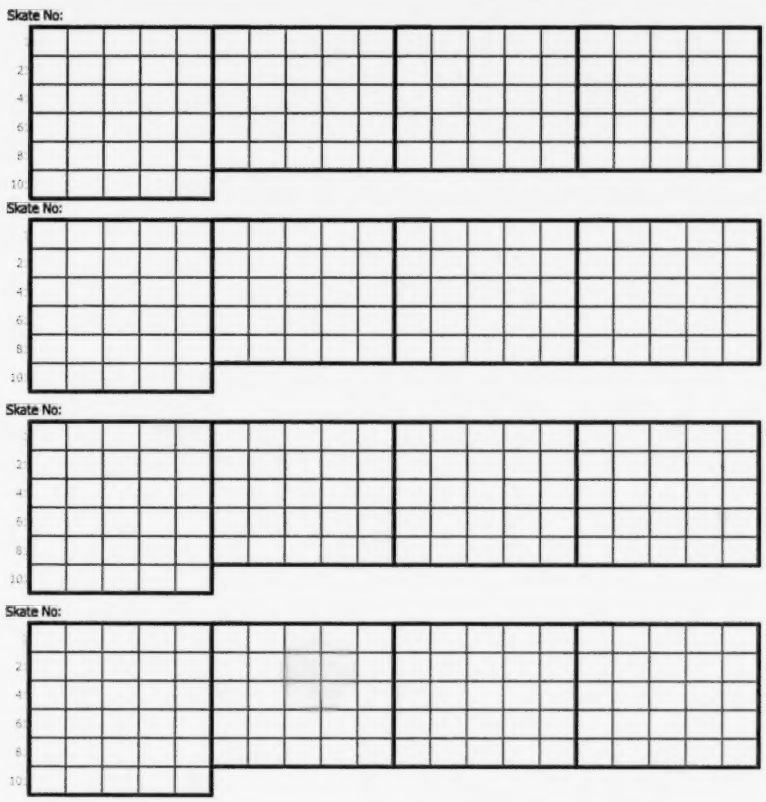
The IPHC collected hook-by-hook occupancy data on the SSA survey from 1993-1996 for internal research projects. Several individual projects in later years also collected these data. The goal of hook-by-hook sampling (a.k.a. whole-haul hook tally) is to record the species caught in order along the line. DFO overlays these data on high resolution bathymetric features for fine-scale habitat analysis.

## *Hook Tally Form*

Each tally form represents one IPHC set. Each form has seven blocks of squares. Each block of 105 squares represents one skate of gear and each square represents one hook. If the gear is maintained to survey standards, there will never be more than 105 hooks per skate. Never record information about two different skates of gear within one block of squares. Use the space on the bottom of the page to tally rockfish that were counted but will not be part of Set Form C data (e.g., lost at the roller, sand fleaed, etc). Explain any discrepancy between counts on hook tally form and on Set Form C in the logbook and on the data form.

**IPHC Hook Tally Form**

| Set | Vessel | Month | Day | Year | Trip No. | 1st Buoy | End Buoy |
|---|---|---|---|---|---|---|---|
| | | | | | | | |




| Hook status | Code |
|---|---|
| Bent/broken/missing | BM |
| Two spp/hook | Circle winner |
| Eaten | % |

| Hook status | Code |
|---|---|
| Lost at roller | # |
| Line parts | / |
| Snarled hooks | [ codes ] |

## *Procedure*

### Header

Transcribe set number, vessel code, date, trip number and buoy information from the Set Form A.

### Skate No.

Observe retrieval of the first flag and buoy. Label the top block of squares on the Hook Tally Form with the appropriate skate number depending on which direction the set is being hauled. When the gear is hauled backwards, still begin the hook tally at the top block of squares, but use the skate number of the last skate set. Always begin at the top of the form, regardless of the hauling direction.

### Hook Occupancy

Find a safe location with a view of the line coming out of the water where you can also see the rollerman's work area. It is important to have a clear view of the hooks as they come out of the water.

Record the status or occupancy of each hook, begin at the top left square of the block and continue across to the end of the row, then move to the left square on the second line and work across that row, and so on.

Identify and record all vertebrates to the species level. Do your best to identify all invertebrates to the species level. Ask the deck sampler to confirm identification.

Use the standard set of shorthand Hook Tally Codes supplied in Appendix 1. Please use an upper case letter for each code, except for 'E', which may be written lower case. Legibility is paramount! If there is not a shorthand code assigned to a species, write the numeric IPHC species code for the organism in the square. A detailed list of IPHC species codes is found in the 2009 SSA survey manual. An example of the top 10 hook tally codes used for animals in BC in 2008 is shown below.

| Common Name | Hook Tally Code |
|---|---|
| Spiny Dogfish | D |
| Pacific Halibut | H |
| Sablefish (Black cod) | BC |
| Arrowtooth Flounder | A |
| Yelloweye Rockfish | YE |
| Redbanded Rockfish | RB |
| Sunflower Sea Star | SN |
| Longnose Skate | LN |
| Lingcod | LC |
| Rougheye Rockfish | RE |

Frequently used hook tally codes

When there is a skate change, begin recording hook occupancy in a new block of squares for the new skate. If there were less than 105 hooks on the skate, leave the remaining squares empty. Remember, hooks from different skates should never be recorded in adjacent squares.

#### Inanimate Objects

If the hook 'catches' or snags an inanimate object (e.g., rocks, shoes, derelict fishing gear), fill in the square for that hook with the inanimate object code (IPHC species code 100).

### Unidentified Plant Matter

If the hook 'catches' or snags sticks or logs, fill in the square for that hook with the unidentified plant matter code (IPHC species code 296).

### Algae

Ignore the presence algae snagged by the hook or the line and record the appropriate status.

## Hook Status

When a hook has not caught an object, has caught more than one organism, or the organism has been bitten or lost at the roller, record a code describing the state of the hook. Use the codes listed in the table below.

| Hook status | Hook Tally Code |
|---|---|
| Empty Hook | E |
| Bait | B |
| Skin Hook | S |
| Bent/Broken/Missing | BM |
| Two spp/hook | (depredator) predator |
| Eaten | code % |
| Lost at roller | code # |
| Line Parts | / |
| Snarl- write brackets around the hooks involved in the snarl | [ ] |

* For the Empty Hook code, you may use a lower case, hand-written "e", as long as the letter is written clearly.

## Difference between 'Bait' and 'Skin Hook'

Use Hook Tally Code 'B' (Bait) when the retrieved hook contains the original bait, including the skin and all or part of the flesh. Use the Hook Tally Code 'S' (Skin) when the retrieved hook contains only the skin of the original bait, or there is hardly any of flesh left on the bait skin.

## Unident. Codes

If you are not 100% confident you can correctly identify a discarded organism to the species level, ask the rollerman to bring it on board. Only unidentifiable escaped organisms should be recorded using an 'unidentified' code.

Code thornyheads on the line as "UI, Unidentified Idiot (Thornyhead)" whenever you do not have the fish in hand to identify it to the species level.

## Meta-codes

The following codes are used to describe either the condition of the line or additional information about the status of the hook.

### Gear snarl: []

Gear snarls are commonplace during longline operations. Gear snarls make it difficult to accurately record the sequential order of hooks and catch. Make your best guess as to the sequence of the hooks (and status) in the snarl and record hook status in the boxes on the form. Then put brackets ( **[ ]** ) around the hooks involved in the snarl. The purpose of the brackets is to inform data users of the hook status with the caution that the order is uncertain. If only two or three hooks are involved in the 'snarl' you should be able to determine the status of each hook and brackets should not be needed.

### Parted gear: /

When the longline parts the vessel will run to the other end and retrieve the gear. When the groundline parts record a forward slash ( **/** ) after the last retrieved hook. When hauling resumes from the other end, begin recording hook status in reverse order starting with the last square in the last block of squares. Record hook status in reverse order from right to left for the entire row. After the row is filled, move to the next row above and continue in the same manner. At the skate junction, move to the next block of squares directly above, starting from the bottom square in that block.

In short, you will be filling the squares with hook information in the opposite direction from the way you were filling the squares before the gear parted so that the total sequence of hooks on the page will still match the sequence of hooks on the line. When the last hook is comes aboard, place another slash to the left of the last retrieved hook. There should be forward slashes at both ends of the parted gear. Record the details of the parted gear in the logbook.

If the line parts before any hooks have been retrieved, complete the hook tally form as if nothing happened and make a note of the event in the logbook. However, be sure the skates are numbered correctly on the form.

### Two species caught on one hook: circled

When two fish are caught on one hook, the first fish hooked is considered the predator, because it was pursuing the bait. The second fish is considered the depredator, because it was attacking the predator. The depredator is the species of interest. On the hook tally form, record the depredator first. Circle this code to note its importance and then record the code for the predator to the right of the circled depredator code. (e.g. (LC) RE )

### Eaten fish: %

Write a percent (**%**) sign next to the code for the animal if the fish shows fresh bite wounds, heavy sand flea predation, or if only lips or a head come up on the line.

### Lost at the roller: #

Write a pound (**#**) sign next to the code when a fish that would normally be retained is lost at the roller. In 2009, only rockfish, pacific cod, and halibut will be retained during survey, so only these species can be considered "lost at roller".

## Protocols for anomalous events:

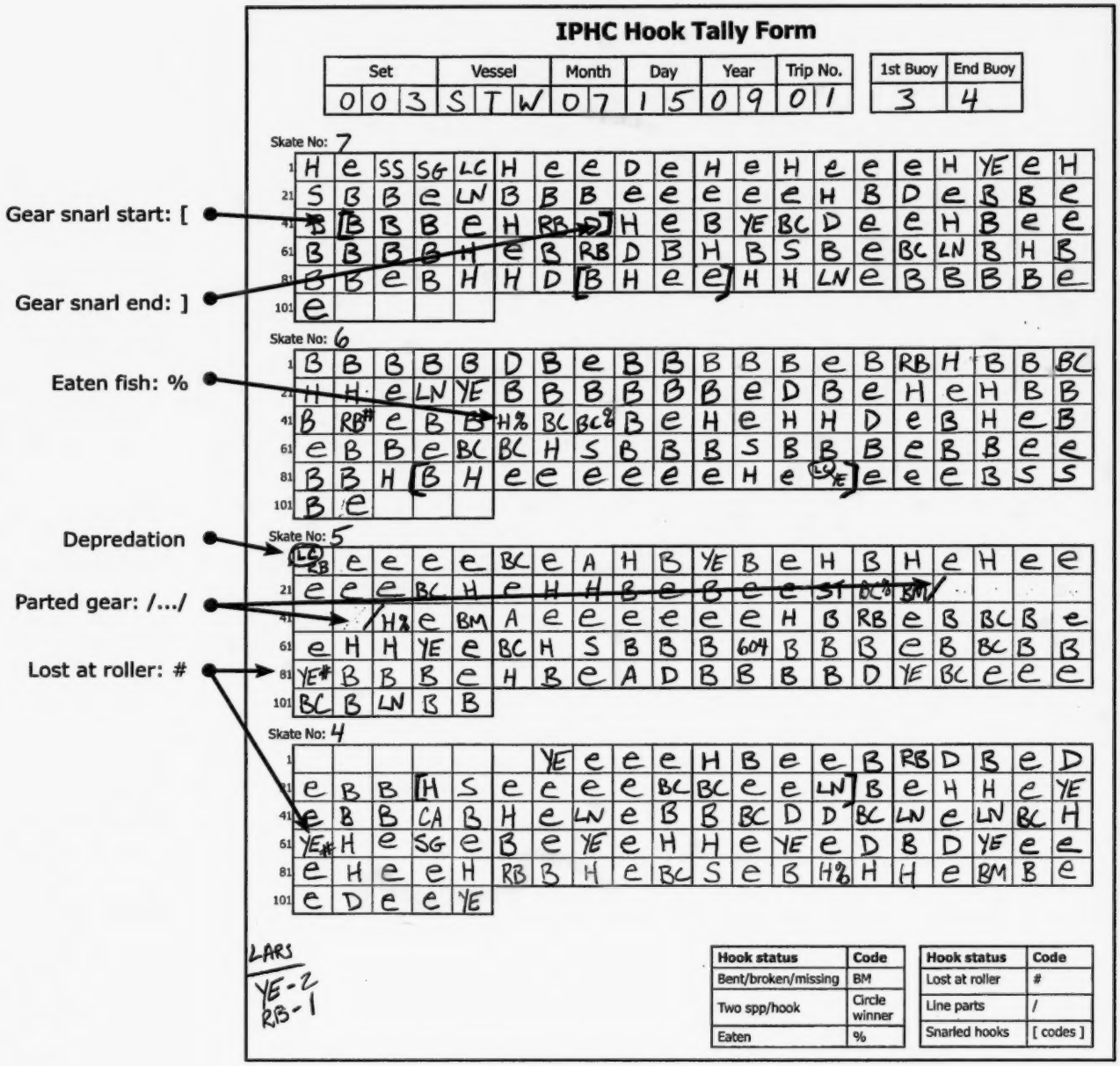
### A skate has >105 hooks

If a skate has more than 105 hooks record occupancy of **all** hooks by adding additional squares to that skate's block. Be sure to flag the skate for correction by the crew.

**Lost gear**

If gear is lost during a haul estimate the number of hooks lost on each skate based on the number of hooks set and fill in the appropriate number of boxes with code '306' or 'UN'. If all skates are lost write "ALL GEAR LOST" across the Hook Tally Form for that set.

***Form Example:***



# Rockfish Biological Data Collection

## Overview

The Set Form C is for recording biological data from non-target species encountered on our surveys. These data include weight, length, sex, maturity, and otolith collection information; and are referred to as LSMO data in this document. The Set Form C is similar to the Set Form B, used for recording biological data from halibut. As with halibut sampling, the shack sampler will record rockfish data on the forms and put the otoliths in the trays. The third sampler will be occupied recording hook occupancy throughout haul, so will not be available to collect biological data from rockfish until hauling is completed. The deck sampler's priority is halibut sampling. If halibut catch allows, the deck sampler should collect rockfish data throughout the set. The appendix has tables showing predicted rockfish and halibut catch at each station; use this information to anticipate your workload for the set and plan accordingly.

## Set Form C

Set Form Cs are double-sided. Use the Set Form C to record data about one species on the front side and the same or a different species on the back side. Do not record data from more than one set on one Set Form C. Fill out all header information, even if data on both sides of the paper are from the same species.

**Set Form C**

Page No. ____ of ____

| Set | Vessel | Month | Day | Year | Trip no |
|---|---|---|---|---|---|
| | | | | | |

**Sample Method**
1 = whole haul
2 = random sub-sample
3 = non-random sub-sample

**Fish State**
20 = Round
4 = Gilled & Gutted

| Common Name: | Species Code | Sample method |
|---|---|---|
| | | |

**Collection type**
1 = two otoliths in one cell
3 = two otoliths in two cells and two trays
5 = one otolith lost
6 = both otoliths lost

**Sex**
M = Male
F = Female
U = Unident

**Maturity**
1, 2, 3, 4, 5, 6, 7 or U

**Comment Codes**
I = Internal parasite
R = Tag recovery
C = Crystallized otolith
E = Eaten
S = Sand flea predation

| Weight (kg) | Length (cm) | Fish State | Otolith Number | Collection Type | Sex | Maturity | Comment | Oto tray: Remarks (not entered) |
|---|---|---|---|---|---|---|---|---|
| . | | | | | | | | |
| . | | | | | | | | |
| . | | | | | | | | |
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| . | | | | | | | | |
| . | | | | | | | | |
| . | | | | | | | | |

## Procedure

Rockfish will be collected and processed throughout the set. They do not have to be separated according to skate. Do not collect LSMO data from *Sebastolobus* species (thornyheads). Fish will be weighed and measured in the round state, then dressed by the crew and returned to samplers for collection of LSMO. Spring clamps with numbered disks will be attached to fish after weighing in order to track fish from round to dressed state.

### Header

Transcribe the set number, vessel code, date, and trip number from the Set Form A.

### Common name

Write the common name of the sampled species.

### Species code

Record the numeric IPHC species code of the sampled species.

### Sample method

Sample method describes the sampling system. There are three possible codes:

1 = whole haul: all retained fish of this species were sampled.

2 = random sub-sample: a random collection from the retained fish of this species was sampled.

3 = non-random sub-sample: a portion of the retained fish were selected non-randomly for sampling.

In 2009 the Sample Method will be '1' (whole haul) for all species, except when you have to enact the reduced sampling protocols. When using the reduced-sampling protocol, the specimens with LSMO data are Sample Method code 3, while the remaining specimens (those subjected to the reduced sampling protocol) must be on data sheets with Sample Method code 1. Specimens with different Sample Methods may not be recorded on the same sheet.

### Weight

Using the motion-compensated scale, record the weight of the fish to the nearest gram (or possibly lower resolution if dictated by scale and conditions). The fish should be weighed round, not gilled or gutted unless it is one of the species for which you have been collecting CF data (yelloweye, redbanded, quillback, silvergrey, and rougheye), in which case you may already have recorded the round weight on the CF form. The weight and length for each fish on this form must be recorded from the same fish state (either both round or both dressed). Follow the protocols for scale usage as directed by the DFO representative who brought the scale to your boat. To track a fish from the round to dressed state, attach a numbered spring clamp to the fish after weighing and convey number to the shack sampler.

### Length

Using the halibut cradle to measure the fish in the round state, record the fork length in centimeters in the same way halibut are measured. If the caudal fin is not forked, measure to the center of the caudal fin. Except for the four or five species for which you may collect round to dressed CF data, always measure these fish in the round, not gilled or gutted. The weight and length for each fish on this form must be recorded from the same fish state (either both round or both dressed). To track a fish from the round to dressed state, attach a numbered spring clamp to the fish after weighing and convey number to the shack sampler.

### Fish State

Record the physical state of the fish at time you took the length and weight measurements. Most fish will be measured round. If you have measured a fish that does not fit into either of the following codes, note this in the remarks field, and let the office know that you need a code for the new fish state.

4 = dressed, gills and guts removed, gonads intact

20 = round, gills and belly intact.

### Otolith Number

Record the number of the otolith. On each vessel, otoliths from each species will be numbered sequentially throughout the season beginning at number one for each species. Refer to the following section titled Otolith Collection for otolith extraction instructions.

Every LSMO sampled fish will have an otolith number, even if both otoliths are lost. If both otoliths are lost, leave the oto tray cell empty for that fish, and record the number of the empty oto tray cell on the Set Form C as the otolith number. Every fish on the Set Form C has a corresponding cell in the oto tray, regardless of the type of otolith collection made (**except**

when the reduced sampling protocol is enacted, in which case, the fish that are measured only will not have an otolith number, but will be recorded on the Set Form C).

### Collection Type

Collection type describes the type of specimen collected during sampling. There are four valid otolith collection codes in 2009. More details are in the Otolith Collection section.

1 = both otoliths collected and stored in one cell in the otolith tray

3 = both otoliths collected and stored in separate cells because two cannot fit in one cell. The first otolith will go in cell 'N in tray A and the second otolith will go in cell 'N' in tray B. For example: the first otolith goes in cell 44 in Tray 3 and the second otolith goes in cell 44 in Tray 4.

5 = one otolith lost; one otolith collected and stored in the otolith tray

6 = both otoliths lost

### Sex

Record the sex of the fish. There are three acceptable codes:

M = Male

F = Female

U = Unidentified. Use the unidentified code if you are unable to classify the sex, or were unable to observe the gonads for whatever reason.

### Maturity

Consult the rockfish maturity guidelines outlined below and, to the best of your ability, assign a maturity to the sample. If you are unable to determine the maturity, or did not observe the gonads, use code U.

| | | Female | | Male | |
|---|---|---|---|---|---|
| *Maturity Code* | *Maturity stage* | *Maturity sub-stage* | *Gonad Condition* | *Maturity sub-stage* | *Gonad Condition* |
| 1 | Immature | Immature | small<br>translucent pink | Immature | threadlike<br>translucent pink |
| 2 | | Maturing | **small**<br>yellow eggs<br>no small black dots present (no reabsorbed larvae)<br>translucent or opaque | Maturing | **string-like**<br>slight swelling<br>residual milt not present<br>translucent |
| 3 | Mature | Developed eggs | **large**<br>yellow or orange eggs<br>a few small black dots may be present (reabsorbed larvae)<br>**opaque** | Developing | **swelling**<br>residual milt may be present in seminal vesicle<br>brown-white |
| 4 | | Fertilized eggs | **large**<br>orange-yellow eggs<br>**translucent** | Developed | **large**<br>**easily broken**<br>**white** |
| 5 | | Embryos/larvae | large<br>Embryos or larvae present- include **eyed eggs**<br>translucent | Running | **running** sperm |
| 6 | | Spent | large<br>**flaccid**<br>a few larvae may be present<br>red ovaries | Spent | **sperm still in duct**<br>white-brown |
| 7 | | Resting | moderate size<br>**firm**<br>**orange-grey ovaries, some with dark blotches** | Resting | **small**<br>**triangular in cross-section**<br>**brown** |
| U | Unknown | Unknown | Unknown | Unknown | Unknown |

Remember the following points while determining rockfish maturities:

- Mature rockfish cycle back to maturity stage **#3**, after the resting stage **#7**, for example: 1-2-3-4-5-6-**7**-**3**-4...
- For females – look for the presence of eyed larvae (small black dots on ovaries) to distinguish mature females (stage 3) from maturing females (stage 2) which do not have eyed larvae present. Determining mature from immature is most important.
- For males – look for the presence of residual milt in the seminal vesicle to distinguish mature testes (stage 3) from immature testes (stage 2), which will not have residual milt present.

### Comment

There are five comment codes that may be entered in this column. You can only enter one code in the comment code field. If you encounter a fish that has more than one comment code, see the priority rules below. You may enter additional comment codes in the Remarks section.

I = Internal parasite present. Use this code to indicate that you observed evidence of parasitic copepods- *Sarcotaces spp.*- in the gut cavity. According to *The Rockfishes of the Northeast Pacific* by Love, Yoklavich and Thorsteinson, adult *Sarcotaces* live in an internal cyst that is usually attached to the rectum, where it feeds off the blood of the host. The cyst often appears as a silver sac filled with black ink that, when burst, emits a black fluid.

R = Tag recovery. If you find a tagged rockfish collect the data required for the Set Form C, record the tag number in the remarks field, and put the tag in a completed tag envelope.

C = Crystallized otolith(s).

E = Eaten or bitten by dogfish, shark, whale, etc. Ignore healed bite wounds.

S = Eaten by sand fleas.

### Oto tray

This field was requested by samplers to track the trays they were using. It is not entered into the database, so you can use it as you please.

### Remarks

Write the fish tracking number (spring clamp number) here to track the specimen from round to dressed state. Place any other information you find useful in this field, keeping in mind that it is not entered in the database, so end-users of this data will not see your comment unless they have the data sheet in hand.

### Total no. sampled for Set Form C and Total no. observed on the Hook Tally Form

Record the total number of fish of that species sampled on the Set Form C for that set. Record the number of times that species was recorded on the Hook Tally Form. Do this once for each species on every set. The number observed on the Hook Tally Form should equal the number sampled on the Set Form C, after fish that were lost at the roller have been added. If there are irresolvable differences between the counts record the explanation in the logbook.

## *Boom or Bust*

### No rockfish caught

If no rockfish are captured on this set, it is not necessary to fill out a Set Form C. Please make sure to write "No Rockfish caught" in the Comments section of the Set Form A for that set.

### Too many rockfish to handle

There may be times when you will not be able to complete all the required rockfish sampling before it is time to haul the next string. If this situation is encountered, the fish should be

placed in baskets or buckets and stored out of the way in a cool place, (and separate from fish on the next string) until there is sufficient time to complete the sampling. You may need to store the fish in the hold to maintain quality and food safety. Use the time at the end of the day to complete the sampling.

If sampling rockfish begins to negatively affect halibut sampling, halibut sampling takes priority. When the rockfish capture is too high for all specimens to be processed or when unforeseen events prevent you from collecting full LSMO data from all rockfish, you will have to reduce sampling on rockfish. To that end we have worked with DFO to arrive at a reduced sampling protocol that still provides DFO with useful data. We consider this an 'emergency escape button' of sorts, and we do not expect it to be employed more than a couple of times in each charter region—if that often. If you find yourself using the reduced sampling protocols more than two times on a trip, please call the office and discuss the deck situation so we can convey this to DFO at the end of the year.

**Reduced Sampling Protocol**

Based on the workflow and other issues, the lead will to select from from the following three options:

1. Collect round length and round weight on Set Form C
2. Collect round length and sex (no weight) on Set Form C
3. Collect dressed length and weight; requires that sufficient conversion factor data is collected.

Before enacting reduced sampling protocol, you must first sample 50 fish for standard data collection of LSMO (and CF data if needed). If there are 50 yelloweye rockfish, sample the yelloweye first. If there are less than 50 yelloweye, sample all available yelloweye first, then make up the remaining sample from redbanded, then quillback, then copper, china, tiger, and black rockfish.

| Priority | Species |
|---|---|
| 1 | Yelloweye |
| 2 | Redbanded |
| 3 | Quillback |
| 4 | Copper |
| 5 | China |
| 6 | Tiger |
| 7 | Black |

After you have collected LSMO for at least 50 fish, sample the remaining rockfish by collecting only the length and weight.

**Sample Method:** Do not mix sample methods on one sheet! On the data sheets with records of the 50 LSMO fish, record the Sample Method 'code 3 = non-random subsample'. On the sheets containing reduced data collection (length + weight or sex), record Sample Method 'code 1 = random sample' because you will be sampling every fish for length and weight (or sex).

When collecting only lengths and weights (or sex) from a sampled fish, complete all fields as usual, leaving Collection Type, Sex (or Weight), and Maturity, and Otolith number blank. If you need to begin a fresh page, continue to use Sample Method of '1' for this species.

This reduced-effort sampling protocol is intended to allow you to begin sampling while gear is still being hauled. If you have all pieces for one species on deck at the end of the haul, use the random sample table to select fish for sampling—do not simply select the first 50 fish in this case—and remember to use Sample Method of '2'. A random sample table is in the appendix.

## *Unidentified rockfish and unknown maturities*

If you are unable to confidently identify a rockfish or have problems classifying the maturity level of a sampled fish, please utilize the resources listed below to ensure the correct ID and maturities are assigned.

### 1. Call or email a DFO representative for advice

Lynne Yamanaka is the lead scientist on this project and the end-user of the data you are collecting. Telephone her from the vessel to discuss any problems you have with identifications or maturities. Please take good notes of your conversation so you can relay what you learn to the IPHC office.

If you are unable to contact Lynne, call the DFO port samplers from Vancouver and Prince Rupert for assistance.

**DFO contacts**

| | |
|---|---|
| Lynne Yamanaka<br>(Project director) | office: 250-756-7211<br>cell: 250-714-9251<br>email: Lynne.Yamanaka@dfo-mpo.gc.ca |
| Schon Acheson<br>(Vancouver) | office: 604-666-2658<br>cell: 604-209-4184<br>email: AchesonSm@pac.dfo-mpo.gc.ca |
| Kristina Anderson<br>(Prince Rupert) | office: 250-627-3475<br>email: AndersonKr@pac.dfo-mpo.gc.ca |

### 2. Save the specimen for later analysis

Label a freezer bag for the sample with the following information: "IPHC research", vessel name, date, set number, your name, otolith number, and the species name or maturity code you have assigned the fish on the data sheet.

Record all label information in the logbook and outline the difficulties of the identification.

Freeze the sample and pass it to a port sampler as outlined in the next point.

### 3. Discuss the identification with the DFO or AMR port sampler at landing

If you are offloading in Prince Rupert of Vancouver, call the DFO port sampler to arrange a meeting with them at offload. At the dock you can discuss the species ID or rockfish maturity with them, and give them the frozen sample so they can pass it on to the DFO office for further examination if necessary.

In Prince Rupert, you should only give the specimen to the AMR port sampler if the DFO sampler is unavailable. If you are offloading at other BC ports, you can ask the AMR port sampler for advice and give the frozen fish to them to store for DFO. Also inform the appropriate DFO representative as to whom was given the specimen.

Double-check that the specimen is well-labeled before handing it off to the port sampler. Record the name of the port sampler and any other details of the discussion in the logbook offload summary notes for that delivery.

# Otolith Collection Specifics

### Collection

**Collect both** otoliths from each fish, and place them together in one cell in the otolith tray. Make cuts for otolith extraction from within the gill cavity to avoid damaging the outside of the fish. Cuts to the outside of the head can reduce marketability of the catch.

### Cleaning and storage

Rockfish otoliths do not need to be kept in glycerin, but must be stored **clean and dry**. Make sure to remove all blood and membranes from the otoliths and wipe them dry with a towel before storing them in the tray. Take time at the end of the day or while the vessel is setting the following morning to ensure the otoliths are completely clean.

### Crystallized otoliths

**Collect crystallized otoliths** and process them in the same manner as un-crystallized otoliths. Record 'C' in the Comment field.

### Broken otoliths

**Save** and collect the pieces of broken otoliths.

### Tray numbering

Otoliths will be stored in separate trays for each species. Record the tray number on the otolith label affixed to the lid as Tray # __ of __.

### Cell numbering

Otolith trays contain one hundred cells that are numbered by the IPHC from 1 to 100 and from left to right and top to bottom. The plastic molding on the tray shows a different numbering system, but your tray bien holder is numbered with the IPHC system for reference.

Cells will be filled sequentially throughout the season on each vessel, starting at 1 for each species, and vessel. The cell number on the otolith tray will always correspond to the otolith number recorded on the Set Form C. Throughout the set, double check that you have the same number of otoliths in the tray as you have on the Set Form C, and that any fish with Collection type of 6 are represented in the tray by an empty cell.

Do not skip cells between sets or trips: always start the next set and the next trip in the next available cell. Place a paper star in the first and last cell of each tray and at the beginning and end cells of each trip. Mark the paper star with the vessel code, trip number, Hook Tally species code and otolith number.

### Lost otoliths

If you lose **one otolith**, collect the remaining otolith and **record code 5** (one otolith lost) in the Collection Type field. The single otolith will occupy the cell that corresponds to the otolith number.

If you lose **both otoliths** collect the remaining data from the fish, record the otolith number, **record code 6** (both otoliths lost) in the Collection Type field, and leave the corresponding otolith cell empty. For the next fish ensure the otolith number matches the next cell in the otolith tray. Because trays will be filled sequentially and completely, the only empty cells in a tray will represent sampled fish with both otoliths lost.

### Large otoliths

If otoliths are too large to fit into the cell, you may snip the tips off the otoliths so they will fit in the cell. Avoid making a break near the center of the otolith. Try to avoid breaking otoliths if at all possible.

If the otoliths are still too large to fit in one cell, you will need to spread them across two cells and two trays. In order to maintain the link between otolith number and cell number you

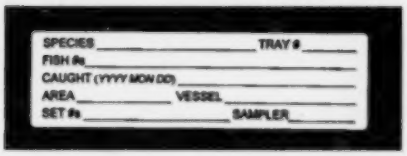
will put the second otolith in the same cell number in a **new tray.** For example, if the 44th sampled Rougheye rockfish has otoliths that are too big to fit into one cell store one otolith in cell 44 of the first otolith tray and the second otolith in cell 44 of the second otolith tray. This may seem like a 'waste' of tray space, but it is currently the best method to collect two large otoliths and maintain a numbering system that allows you to coordinate otolith number with cell number. In this instance record code 3 (two otoliths split in two cells and two trays) in the Collection Type field. For the next fish, use the next consecutive otolith number and store the otoliths in the next available cell **in the new tray**. Leave the remaining cells in the old tray empty.

If a single otolith alone is too large to fit in a cell and you do not want to clip the ends off, put a star in that cell and put the otoliths in an envelope. Be sure to write vessel, year, species, and otolith number on the envelope. Attach the envelope to the appropriate Tray Bien with rubber bands or tape.

## *Otolith Tray Label*

DFO has supplied the IPHC with Tray Biens™ for storing rockfish otoliths. These trays have special labels that should be completed as outlined below.

DFO Rockfish otolith tray label shown below




**Species**
Record the Latin name for the species.

**Tray #**
Label the trays as 1 of 3, 2 of 3, and 3 of 3.

**Fish Number**
Record the range of otolith numbers in the tray.

**Caught**
Record the range of dates the otoliths were obtained, in the following format: YYYYmonDD (e.g. 2007Jun04 – 2007Jul17).

**Area**
List all DFO Areas in which these fish were caught (Appendix 3 lists the DFO area for each IPHC station).

**Vessel**
Record the full name of the vessel.

**Set Numbers**
Record the range of set numbers included in the tray.

**Samplers**
Record the full name of the lead sampler.

## *Mailing Otoliths*

Mail otoliths to Seattle after the boat has completed all its BC charter regions for the season. If you do not have sufficient storage space on your vessel for the full trays you may mail **completed** trays to Seattle as needed. If you accidentally mail a tray of otoliths with unused

cells mid-season, start the next tray on the next cell number. Cell number should always match otolith number from Set Form C.

For Example:

Trip two has ended with yelloweye fish number 332. The cases have been mailed back to the lab, so trip three will start with a new case. The first yelloweye otolith number will be 333, and its otolith will be placed in cell 33.

Use rubber bands or masking tape to secure the lid of the tray, but be sure not to cover the label. Package rockfish otoliths separately from halibut otoliths. Clearly mark the outside of the package to indicate it contains rockfish otoliths.

# Conversion Factor Data Collection

## *Background*

Obtaining conversion factors (CF) for converting dressed lengths and weights to round lengths and weights will allow managers to use our data without taking round measurements of every fish. Because DFO recognizes that rockfish characteristics vary dependent on latitude and because different dressing techniques affect the dressed weight and length, DFO does not use standard conversion factors for the rockfish work for which we are collecting data. We will collect round weight and a round length for **10% by number of each rockfish species or 50 specimens, whichever is greater** for each charter region. The collection of these data must be roughly dispersed among stations and sizes; i.e., don't collect all on one trip or all from fish of similar sizes.

| Charter region | Species potentially targeted for CF data collection |
|---|---|
| Vancouver | Quillback, Redbanded, Yelloweye |
| Goose Island | Redbanded, Yelloweye |
| St. James | Redbanded, Rougheye, Yelloweye |
| Charlotte | Quillback, Redbanded, Rougheye, Silvergrey, Yelloweye |

While collecting the normal rockfish LSMO data, you will select fish for determining round to dressed conversion factors. These fish will not be selected randomly. Instead, select fish so that lengths are spread across the range of lengths for that species and so that the data collected is distributed (north-south) within that charter region. The appendix has tables showing maximum catch of each rockfish species at each station in 2B over the last two years and extrapolated to 7 skates. Use this information to predict when to take your CF samples on which species. You will notice that for several, less frequently encountered species, you will be collect CF data on every specimen because less than 50 fish are anticipated to be captured.

****Important consideration****

The lead will need to determine if collecting CF data will reduce or create work on your boat in the region you are working. If collecting round weights and lengths does not slow your workflow, it may be easiest to simply collect round weighs and lengths for all species rather than collecting dressed weights and lengths for all and round weights and lengths for only a subset.

## *Data form*

**Round to Dressed Conversion Factor data** Page No. ___ of ___

| Vessel | Year | Trip no | Charter Region |
|---|---|---|---|
| | | | |

| Common Name: | Species Code |
|---|---|
| | |

| Tracking No. (not entered) | Round Weight (kg) | Round Length (cm) | Otolith Number | Remarks (not entered) |
|---|---|---|---|---|
| | . | | | |
| | . | | | |
| | . | | | |
| | . | | | |
| 5 | . | | | |
| | . | | | |
| | . | | | |
| | . | | | |

Record round lengths and weights on a conversion factor data collection sheet(s) for each species for which you have decided to collect CF data. The data on the CF form is linked to the Set form C by vessel, year, species, and otolith number. At the top of the form, add the vessel code, year, and charter region. Write the common name of the species recorded on the form and enter that species number as well. The data table has five (5) columns, two (2) of which are not entered in the database.

### Tracking number

The first column, Tracking No., is where you record the number on the disc clipped to the fish when it is in the round state (explained in Procedure section). The tracking number is used to match the round measurements on the CF form with the dressed measurements on the Set Form C before an otolith number has been assigned to that fish. These numbers are not unique and may repeat.

### Round weight

Record the round weight as displayed on the scale

### Round Length

Measure the fish in round state using the measuring cradle.

### Remarks

Use this field to take notes that will help you keep track of fish or any other remarks you find helpful. This info will not be entered into a database. Information about specific fish is best saved for the Set Form C.

### Procedure

1. Shack sampler determines if a fish is to be sampled for round weight and length. The shack sampler will tell you which sizes are desired. The only time you will not sample for round weight and length is when fishing is too heavy to keep up with the work or when there are far more fish available than CF samples needed for a species for which you are collecting CF data.
2. Record round weight and length on the CF form. The otolith number will be added when the fish is ready for LSMO sampling, after it has been dressed by the crew.
3. Clip a numbered snap on the fish, convey number to shack sampler.

4. Give the fish back to the crew for dressing.
5. After the fish has been dressed, tell the shack sampler the number on the snap so the shack sampler can write the otolith number on the CF form.
6. Remove numbered snap
7. Weigh it and collect LSMO data on Set form C.

### Tracking samples for stratification

To obtain the best CF, it is important to spread the sample within each Charter region and to collect measurements from as broad a size range as possible. To that end, you have been supplied with a table to help track your samples of each species (shown below). The tables have a column for length, based on the maximum and minimum lengths of that species captured on our surveys over the last few years, and a column for each third of the charter region, divided in to a northern, a central, and a southern sector. Use the tables to make sure your sample is spread as evenly as possible. When you take a CF sample, record that sample in the appropriate box. The catch table in the Survey manual has stations shaded by geographic sector.

**CF tracking table**

| Redbanded | | | |
|---|---|---|---|
| Length (cm) | Northern 1/3 | Middle 1/3 | Southern 1/3 |
| 25 | | | |
| 26 | x | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | x | | |
| 32 | | | |
| 33 | | x | x |
| 34 | | | |
| 35 | | x | |

## *CF Data submission*

Please fax your CF data forms with your end of trip packets. Include them with your EOT forms (not your set forms) that are mailed to the Seattle office. The tracking sheets are for your own use and do not need to be mailed because we will have this information when the Set Form Cs and the CF sheets are key punched.

# MISCELLANY

## *20 hook count*

Because you are completing a Hook Tally Form for a set, you are NOT required to complete "Part 2: Subsample" on the back of the Set Form A. You still must complete "Part 1: Whole Haul Sample" for missing bait, bent/broken/missing hooks, marine mammals and seabirds.

## *Data editing*

The total number of rockfish in your hook-by-hook tally will equal the total number of samples on the suite of Set Form Cs for that set (corrected for fish lost at roller).

## *Lost hook tally form*

If a hook tally form is washed or blown overboard during a haul, get a new form and collect as much data as possible and write an explanation on the form, logbook, and Set Form A. If a hook tally form is lost at the end of a set, use a blank form, with header info, to indicate that is was lost.

## *End of Trip Summary in your logbook*

Include the last otolith number of each rockfish species in the End of Trip Summary in your logbook.

## *Mailing data forms*

Collate the Set Form Cs with the Set Form A and Set Form Bs for each set.

Keep the Hook Tally Forms separate. When you are preparing to mail the data packets clip the Hook Tally Forms by trip.

## *Evaluations*

Your feedback on any aspect of this project is welcomed at any time throughout the season.

The lead, second and third samplers should each fill out an evaluation of the project at the end of their time on the vessel, or at the end of the project, whichever occurs first. These **special project evaluations** are in the Admin pack. Mail completed evaluations with end of trip documents.

## *Vessel Logbooks*

There is no requirement for the IPHC sampler to fill out the vessel logbook; this is solely the responsibility of the charter vessel captain. Additionally, there is no need for the IPHC sampler to report catch data to the dockside monitors. This is also the responsibility of the captain. If you have time and would like to do so, you may assist the captain with these responsibilities by sharing bycatch information with him. IPHC surveys are cooperative ventures and we encourage all members of the team to work together to complete the charter.

# Appendix 1: Hook Tally Codes

| Round and Flat Fish | | | |
|---|---|---|---|
| IPHC Species Code | Common Name | Scientific Name | Hook Tally Code |
| 2 | Arrowtooth Flounder | Atheresthes stomias | A |
| 12 | Dover Sole | Microstomus pacificus | DS |
| 64 | Flatfish, unident. | Pleuronectiformes | UF |
| 3 | Flathead Sole | Hippoglossoides elassodon | FS |
| 37 | Giant Wrymouth | Delolepis gigantia | WE |
| 148 | Great Sculpin | Myoxocephalus polyacanthocephalus | GS |
| 16 | Greenland Turbot | Reinhardtius hippoglossoides | GT |
| 23 | Greenling, unident. | Hexagrammidae | G |
| 42 | Grenadier (Rattail), unident. | Macrouridae | RT |
| 152 | Kamchatka Flounder | Atheresthes evermanni | KF |
| 21 | Lingcod | Ophiodon elongatus | LC |
| 26 | Pacific Cod | Gadus macrocephalus | C |
| 86 | Pacific Hake | Merluccius productus | PH |
| 1 | Pacific Halibut | Hippoglossus stenolepis | H |
| 14 | Petrale Sole | Eopsetta jordani | P |
| 145 | Red Irish Lord | Hemilepidotus hemilepidotus | RL |
| 4 | Rock Sole, unident. | Lepidopsetta sp. | RS |
| 34 | Ronquil, unident. | Bathymasteridae | RQ |
| 27 | Sablefish (Blackcod) | Anoplopoma fimbria | BC |
| 20 | Salmon, unident | Salmonidae | SA |
| 29 | Sculpin, unident. | Cottidae | SC |
| 56 | Spotted Ratfish | Hydrolagus colliei | RF |
| 28 | Walleye Pollock | Theragra chalcogramma | PO |
| 146 | Yellow Irish Lord | Hemilepidotus jordani | YL |

| Rockfish | | | |
|---|---|---|---|
| IPHC Species Code | Common Name | Scientific Name | Hook Tally Code |
| 132 | Blackgill Rockfish | Sebastes melanostomus | BG |
| 127 | Bocaccio | Sebastes paucispinis | BO |
| 57 | Canary Rockfish | Sebastes pinniger | CA |
| 88 | China Rockfish | Sebastes nebulosus | CH |
| 58 | Dusky Rockfish | Sebastes ciliatus | DR |
| 154 | Greenstriped Rockfish | Sebastes elongatus | GN |
| 59 | Northern Rockfish | Sebastes polyspinis | NR |
| 87 | Quillback Rockfish | Sebastes maliger | QB |
| 90 | Redbanded Rockfish | Sebastes babcocki | RB |
| 121 | Rosethorn Rockfish | Sebastes helvomaculatus | RO |
| 31 | Rougheye Rockfish | Sebastes aleutianus | RE |
| 119 | Shortraker Rockfish | Sebastes borealis | SR |
| 60 | Silvergray Rockfish | Sebastes brevispinis | SG |
| 45 | Unident. Rockfish | Sebastes spp | R |
| 136 | Widow Rockfish | Sebastes entomelas | WI |
| 89 | Yelloweye Rockfish | Sebastes ruberrimus | YE |
| 128 | Yellowmouth Rockfish | Sebastes reedi | YM |
| 122 | Yellowtail Rockfish | Sebastes flavidus | YT |

| Skates and Sharks | | | |
|---|---|---|---|
| IPHC Species Code | Common Name | Scientific Name | Hook Tally Code |
| 137 | Alaska Skate | Bathyraja parmifera | AK |
| 138 | Aleutian Skate | Bathyraja aleutica | AL |
| 167 | Bering Skate | Bathyraja interrupta | BE |
| 141 | Big Skate | Raja binoculata | BI |
| 140 | Black Skate | Bathyraja trachura | BS |
| 126 | Blue Shark | Prionace glauca | BL |
| 169 | Commander Skate | Bathyraja lindbergi | CK |
| 168 | Golden Skate | Bathyraja smirnovi | GO |
| 143 | Longnose Skate | Raja rhina | LN |
| 142 | Sandpaper Skate | Bathyraja kincaida | SD |
| 63 | Shark, unident. | Elasmobranchii | SH |
| 55 | Skate, unident. | Rajidae | SK |
| 125 | Sleeper Shark | Somniosus pacificus | SS |
| 129 | Soupfin Shark | Galeorhinus zyopterus | SF |
| 54 | Spiny Dogfish | Squalus acanthias | D |
| 156 | Whiteblotched Skate | Bathyraja maculata | W |

| Invertebrates | | | |
|---|---|---|---|
| IPHC Species Code | Common Name | Scientific Name | Hook Tally Code |
| 211 | Basketstar | Gorgonocephalus eucnemis | BK |
| 106 | Bryozoa, unident. | Bryozoa | BZ |
| 95 | Coral, unident. | (includes hard and soft) | CO |
| 209 | Fish-eating Star | Stylasterias Forreri | FE |
| 218 | Glass Sponge, unident. | Hexactinellida | GL |
| 51 | Octopus, unident. | Octopoda | O |
| 52 | Scallop, unident. | Pectinid | US |
| 93 | Sea Anemone, unident. | Actiniaria | AN |
| 73 | Sea Cucumber, unident. | Holothuroidea | CU |
| 92 | Sea Pen, unident. | Pennatulacea | SE |
| 82 | Sea Urchin, unident. | Echinoidea | SU |
| 103 | Shells, unident. | (includes bivalve and gastropods) | SL |
| 91 | Sponge, unident. | Porifera | SP |
| 81 | Starfish, unident. | (includes brittle and basketstars) | ST |
| 210 | Sunflower Sea Star | Pycnopodia helianthoides | SN |

| Other | |
|---|---|
| IPHC Species Code | Common Name |
| 100 | Inanimate Object |
| 296 | Unidentified plant matter |

# Appendix 2: Predicted rockfish encounters for 2009

The following tables list the maximum rockfish encounter at each station from 2007-2008. The numbers have been scaled to reflect anticipated catch on 7 skates. Use these tables to predict the amount of work at each station and whether you will need to prepare to subsample rockfish on a set. Stations not listed are ones that did not catch any rockfish in 2007-2008.

**2009 Vancouver Region Rockfish predictions**

| Station no. | Bocaccio | Canary Rockfish | China Rockfish | Greenstriped Rockfish | Quillback Rockfish | Redbanded Rockfish | Rosethorn Rockfish | Rougheye Rockfish | Shortraker Rockfish | Silvergray Rockfish | Yelloweye Rockfish | Total Rockfish prediction | Halibut prediction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 | | | | | | 1 | | 7 | 3 | 1 | | 13 | 18 |
| 2005 | | | | 1 | | | | | | | 49 | 50 | 81 |
| 2006 | | | | | | | | | | 1 | 1 | 3 | 13 |
| 2007 | | | | | 18 | | | | | | 11 | 29 | 25 |
| 2008 | | | | | 1 | | | | | | 15 | 17 | 91 |
| 2012 | | | 8 | | 8 | | | | | | 4 | 21 | 39 |
| 2013 | | | | | 6 | | | | | | 8 | 14 | 34 |
| 2014 | | 1 | | | | | | | | | | 1 | 64 |
| 2015 | 1 | | | | | 1 | | | | | | 3 | 21 |
| 2016 | | | | | 3 | | | | | | | 3 | 31 |
| 2018 | 1 | | | | | 1 | | | | | | 3 | 24 |
| 2020 | | | | | | | | | | | 13 | 13 | 48 |
| 2024 | | 4 | 1 | | 4 | | 1 | | | 1 | 48 | 60 | 43 |
| 2026 | | | | | | 6 | | | | | | 6 | 18 |
| 2027 | | | | | 1 | | | | | | | 1 | 11 |
| 2029 | | | | | | | | | | 1 | | 1 | 11 |
| 2031 | 1 | | | | | 20 | | | | | 3 | 24 | 8 |
| 2033 | 4 | 3 | | | | | | | | | 6 | 13 | 17 |
| 2034 | | | | | 4 | | | | | | 6 | 10 | 130 |
| 2035 | 6 | 1 | | | | 15 | | | | | 28 | 50 | 17 |
| 2037 | 1 | | | | | 42 | | | | 1 | 18 | 63 | 7 |
| 2038 | | 4 | | | 10 | | | | | 1 | 24 | 39 | 63 |
| 2039 | | | | | | 1 | | | | 4 | 1 | 7 | 14 |
| 2040 | | 1 | | | 10 | | | | | | 1 | 13 | 49 |
| 2042 | | | | | 6 | | | | | | 4 | 10 | 56 |
| 2043 | | | | | | 1 | | | | | | 1 | 88 |

Appendix 2: Predicted rockfish encounters in 2009
Based on maximum encounters 2007-2008,
scaled for 7 skates

**2009 Goose Island Rockfish Prediction**

| Station no. | Bocaccio | Canary Rockfish | Greenstriped Rockfish | Quillback Rockfish | Redbanded Rockfish | Rougheye Rockfish | Shortraker Rockfish | Silvergray Rockfish | Yelloweye Rockfish | Yellowmouth Rockfish | Total Rockfish prediction | Halibut prediction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2044 | | | | 1 | | | | | 18 | | 20 | 53 |
| 2045 | 1 | | 1 | | | | | 11 | 48 | | 62 | 13 |
| 2046 | | | | | | | | | 6 | | 6 | 78 |
| 2047 | | | | | | | | | 1 | | 1 | 48 |
| 2049 | | | | | | | | | 1 | | 1 | 39 |
| 2050 | 3 | | | | 67 | | | 7 | 15 | 1 | 94 | 57 |
| 2051 | | 4 | | 1 | | | | | 25 | | 31 | 43 |
| 2052 | | | | | 8 | | | | | 1 | 10 | 60 |
| 2054 | 1 | | | | | | | 1 | 1 | | 4 | 111 |
| 2055 | | | | | 7 | 4 | 4 | | | 1 | 17 | 76 |
| 2056 | | | | | 1 | | | | | | 1 | 122 |
| 2057 | | | | | | | | | 7 | | 7 | 34 |
| 2060 | | | 1 | | 4 | | | 1 | 1 | | 8 | 69 |
| 2061 | 1 | 1 | | | 15 | 1 | | | | | 20 | 42 |
| 2062 | | 1 | | | 13 | 1 | | | | | 15 | 126 |
| 2063 | | | | | 7 | | | | 1 | | 8 | 10 |
| 2064 | | | | | 10 | | | | | | 10 | 14 |
| 2065 | | | | 8 | | | | 1 | 70 | | 80 | 43 |
| 2066 | | | | | 4 | 1 | | | | | 6 | 32 |
| 2069 | | | | | | | | | 10 | | 10 | 192 |
| 2070 | 1 | | | 1 | | | | | 102 | | 105 | 144 |
| 2071 | | 4 | | | 7 | | | 13 | 109 | 1 | 134 | 55 |
| 2072 | | | | | 36 | | 1 | | | 3 | 41 | 13 |
| 2073 | | 1 | | | 3 | | | | 3 | | 7 | 143 |
| 2077 | | | | | 29 | 15 | | | 4 | 1 | 50 | 48 |
| 2078 | | | | 7 | 21 | | | | 7 | | 35 | 111 |
| 2079 | 1 | | | | | | | | | | 1 | 200 |
| 2080 | 3 | | | 4 | | | | | 15 | | 22 | 168 |
| 2081 | 1 | 1 | | | | | | 1 | | | 4 | 50 |
| 2082 | | | | | 28 | 27 | 1 | | | | 56 | 22 |
| 2083 | | | | | 160 | | | | | | 160 | 63 |
| 2084 | 1 | | | | | | | | 13 | | 14 | 108 |
| 2085 | | | | | 17 | | | | | | 17 | 15 |
| 2086 | | | | | 69 | 1 | | 3 | 7 | | 80 | 57 |

Appendix 2: Predicted rockfish encounters in 2009
Based on maximum encounters 2007-2008,
scaled for 7 skates

**2009 St. James Rockfish Prediction**

| Station no. | Bocaccio | Canary | Darkblotched | Quillback | Redbanded | Rosethorn | Rougheye | Shortraker | Silvergray | Tiger | Yelloweye | Yellowmouth | Total Rockfish prediction | Halibut prediction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2087 | | | | | 24 | | 35 | 3 | | | | 1 | 63 | 6 |
| 2088 | | | 1 | | 20 | | 1 | | | | | 3 | 25 | 63 |
| 2089 | | | | | 27 | | 1 | 1 | | | | | 29 | 8 |
| 2090 | | 1 | | | 10 | | | | 6 | | 29 | | 46 | 94 |
| 2091 | 1 | | | | 25 | | | | 3 | | 34 | | 63 | 41 |
| 2092 | | | | | 1 | | 8 | | | | | 3 | 13 | 70 |
| 2093 | 8 | 1 | | | 24 | | | | 6 | | 123 | | 162 | 115 |
| 2094 | | | | | 39 | | | | | | 11 | | 50 | 20 |
| 2095 | | 1 | | | | | | | 3 | | 27 | | 31 | 164 |
| 2097 | | | | | 1 | | 4 | | | | | | 6 | 3 |
| 2098 | | | | | 3 | | | | | | | | 3 | 31 |
| 2099 | | | | | 1 | | | | 3 | | 4 | | 8 | 46 |
| 2100 | 3 | 3 | | | 49 | | | | | | 73 | | 127 | 28 |
| 2101 | | | | | 8 | | | | | | | | 8 | 8 |
| 2102 | | | | | 10 | | | | | | | | 10 | 10 |
| 2103 | | | | | 42 | | | | 1 | | | | 43 | 15 |
| 2104 | | | | | | | | | 1 | | | | 1 | 62 |
| 2105 | | | | | | | 1 | | | | | | 1 | 0 |
| 2106 | | 1 | | | 8 | | | | 1 | | 1 | | 13 | 91 |
| 2107 | | | | | 7 | | | | | | | | 7 | 241 |
| 2108 | | | | | 8 | | | | | | | | 8 | 101 |
| 2109 | | | | | 21 | | | | | | | | 21 | 45 |
| 2110 | | | | | 112 | | | | 1 | | | | 113 | 45 |
| 2111 | | | | | 28 | | | | 1 | | | | 29 | 52 |
| 2112 | | | | | 8 | | 1 | | | | | | 10 | 3 |
| 2113 | | | | | 3 | | | | | | 4 | | 7 | 27 |
| 2115 | | | | 1 | | | | | | | | | 1 | 42 |
| 2116 | 1 | | | | 11 | | | | 1 | | 22 | | 36 | 104 |
| 2117 | | | | | 41 | | 1 | | | | | | 42 | 56 |
| 2118 | | | | | 11 | 1 | 3 | | 1 | | | | 17 | 25 |
| 2119 | | 6 | | | | | | | | 1 | 32 | | 39 | 62 |
| 2120 | | | | 3 | | | | | 1 | | 1 | | 6 | 25 |
| 2121 | 1 | | | | 41 | | | | 1 | | 3 | | 46 | 60 |
| 2122 | | | | | 49 | | 8 | 6 | | | | | 63 | 14 |
| 2123 | | | | | 63 | | 1 | | | | | | 64 | 13 |
| 2124 | | | | | 1 | | | | 1 | | 29 | | 32 | 31 |
| 2125 | | | | | 39 | | 1 | 1 | | | | | 42 | 6 |
| 2126 | | | | | 15 | | | | | | | | 15 | 7 |
| 2127 | | | | | 38 | | | | 1 | | 1 | | 41 | 42 |
| 2128 | | | | | 53 | | | | | | 1 | | 55 | 32 |

Appendix 2: Predicted rockfish encounters in 2009
Based on maximum encounters 2007-2008,
scaled for 7 skates

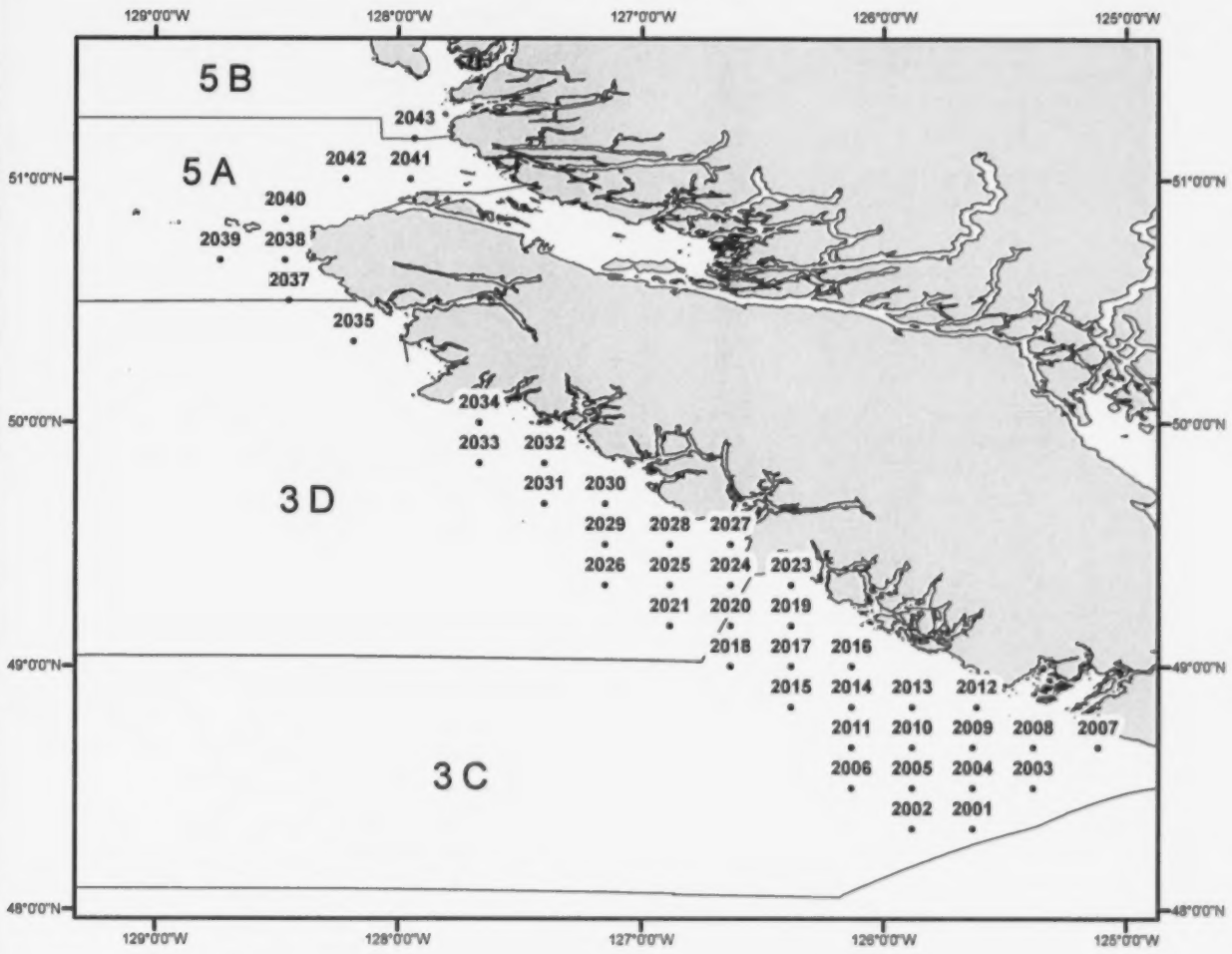
**2009 Charlotte Rockfish Prediction**

| Station no. | Bocaccio | Canary Rockfish | China Rockfish | Copper Rockfish | Darkblotched Rkfish | Greenstriped Rockfish | Quillback Rockfish | Redbanded Rockfish | Rosethorn Rockfish | Rougheye Rockfish | Shortraker Rockfish | Silvergray Rockfish | Yelloweye Rockfish | Yellowmouth Rockfish | Yellowtail Rockfish | Total Rockfish prediction | Halibut prediction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2129 | | | | | | | 11 | | | | | 1 | 17 | | | 29 | 66 |
| 2130 | | | | | | | 3 | | | | | | 7 | | | 10 | 28 |
| 2131 | 1 | | | | | | | | | | | | | | | 1 | 69 |
| 2132 | | | | | | | 1 | | | | | | | | | 1 | 90 |
| 2133 | | | | | | | | | | | | 1 | 4 | | | 6 | 48 |
| 2135 | | | | | | | | 59 | | 1 | | | | | | 60 | 3 |
| 2136 | 1 | | | | | | | | | | | | | | | 1 | 45 |
| 2137 | | | | | | | | 50 | | | | | 10 | | | 60 | 38 |
| 2138 | | | | | | | | 27 | | | | | | | | 27 | 8 |
| 2139 | | | | | | | | | | | | | 1 | | | 1 | 21 |
| 2140 | | | | | | | 1 | | | | | | 6 | | | 7 | 132 |
| 2141 | 1 | | | | | | 18 | | 1 | | | | 50 | | | 71 | 106 |
| 2142 | | | | | | | 1 | 3 | | | | | 1 | | | 6 | 50 |
| 2143 | 4 | 4 | | | | | | | 1 | | | 32 | 10 | | | 52 | 94 |
| 2144 | 1 | | | | | 1 | | | | 1 | | 10 | | 3 | | 17 | 55 |
| 2146 | 3 | | | | | | | 10 | | 57 | 22 | | | | | 92 | 31 |
| 2147 | | | | 8 | | | | | | | | | | | | 8 | 41 |
| 2149 | 1 | 4 | | | | | | | | | | 15 | 28 | | | 49 | 105 |
| 2151 | | 6 | | | | | 13 | | | | | 6 | 28 | | | 52 | 74 |
| 2152 | | | | | | | 8 | | | | | | | | | 8 | 20 |
| 2154 | | | | | | | | | | | | 1 | | | 1 | 3 | 63 |
| 2156 | | 4 | 6 | | | | 27 | | | | | | 20 | | | 56 | 85 |
| 2157 | | | | | | | | | | 91 | 10 | | | | | 101 | 45 |
| 2158 | | | | | | | 10 | | | | | | 4 | | | 14 | 31 |
| 2160 | | | | | | | | 97 | | | | | | | | 97 | 55 |
| 2161 | | | | | | | | 8 | | | | 42 | | | | 50 | 98 |
| 2162 | | | | | | | | 11 | | 18 | 1 | | | | | 31 | 22 |
| 2163 | | | | | | | | 22 | | 17 | 4 | 8 | | | | 52 | 81 |
| 2164 | | | | | | | | 10 | | 57 | 6 | | | | | 73 | 29 |
| 2165 | | | | | | | | | | 27 | 1 | | | | | 28 | 34 |
| 2166 | | | | | | | | | | 21 | 1 | | | | | 22 | 25 |
| 2167 | 1 | | | | | | | 56 | | | | 20 | 57 | | | 134 | 69 |
| 2168 | | | | | | | | 4 | | | | | | | | 4 | 99 |
| 2169 | | | | | | | 1 | | | | | | 1 | | | 3 | 24 |
| 2170 | | | | | | | | 4 | | | | | | | | 4 | 161 |
| 2171 | | 7 | | | 1 | | 1 | 6 | | | | 1 | 13 | | | 29 | 144 |

Appendix 2: Predicted rockfish encounters in 2009
Based on maximum encounters 2007-2008,
scaled for 7 skates

# Appendix 3: IPHC stations by DFO area

## Vancouver Stations



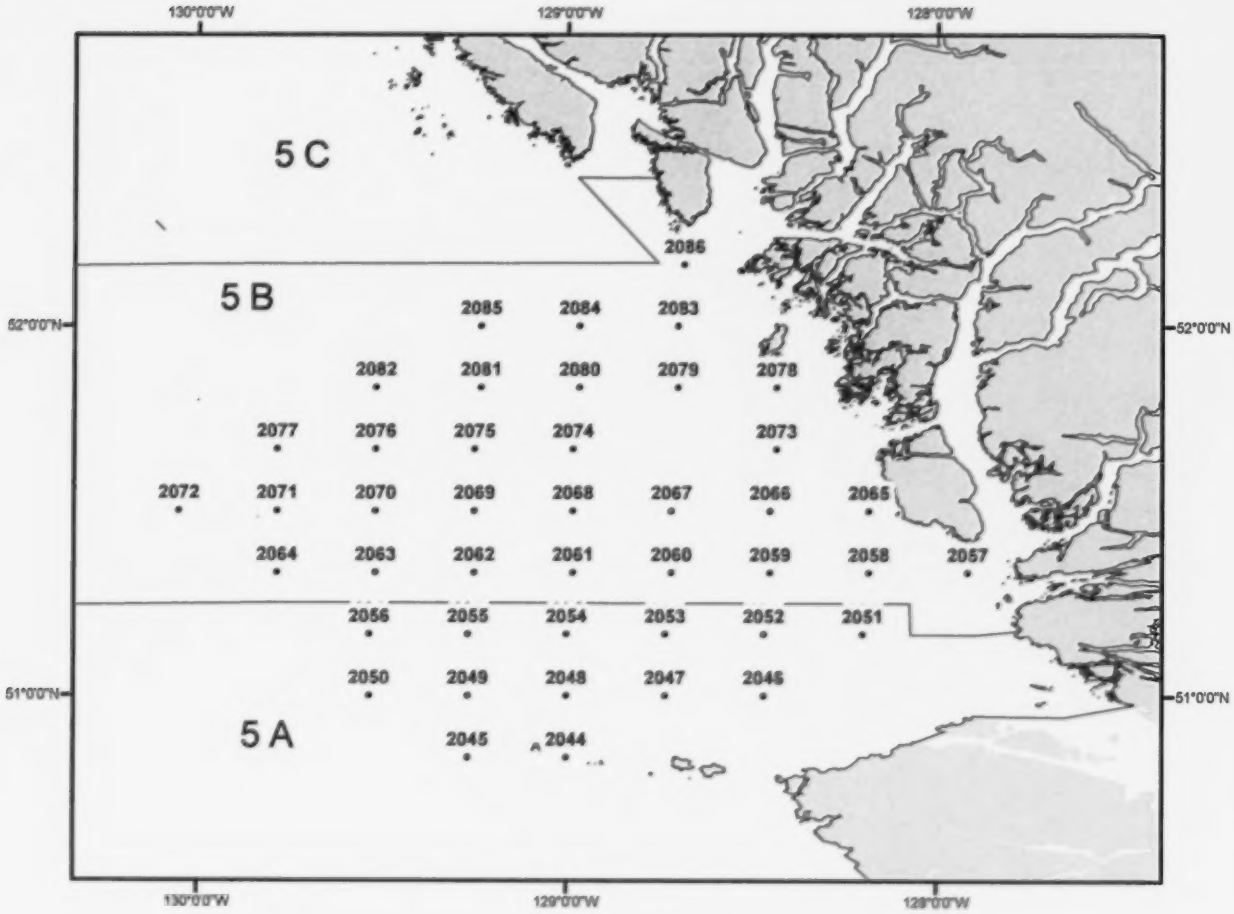

| IPHC Station Number | DFO Area |
|---|---|
| 2001 | 3C |
| 2002 | 3C |
| 2003 | 3C |
| 2004 | 3C |
| 2005 | 3C |
| 2006 | 3C |
| 2007 | 3C |
| 2008 | 3C |
| 2009 | 3C |
| 2010 | 3C |
| 2011 | 3C |
| 2012 | 3C |
| 2013 | 3C |
| 2014 | 3C |

| IPHC Station Number | DFO Area |
|---|---|
| 2015 | 3C |
| 2016 | 3C |
| 2017 | 3C |
| 2018 | 3C |
| 2019 | 3C |
| 2020 | 3C |
| 2021 | 3D |
| 2023 | 3C |
| 2024 | 3D |
| 2025 | 3D |
| 2026 | 3D |
| 2027 | 3D |
| 2028 | 3D |
| 2029 | 3D |

| IPHC Station Number | DFO Area |
|---|---|
| 2030 | 3D |
| 2031 | 3D |
| 2032 | 3D |
| 2033 | 3D |
| 2034 | 3D |
| 2035 | 3D |
| 2037 | 3D |
| 2038 | 5A |
| 2039 | 5A |
| 2040 | 5A |
| 2041 | 5A |
| 2042 | 5A |
| 2043 | 5B |

Appendix 3: IPHC stations byDFO area

# Goose Island Stations



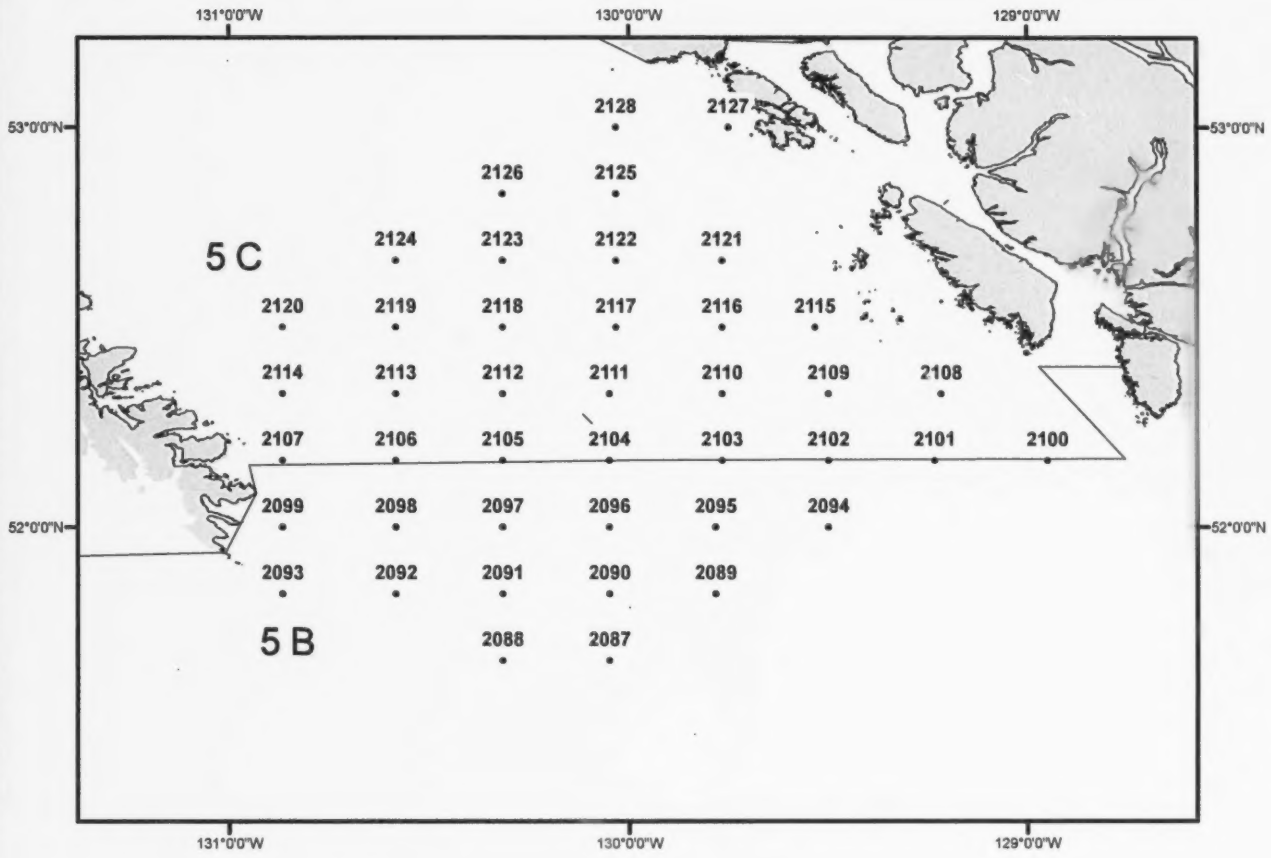

| IPHC Station Number | DFO Area |
|---|---|
| 2044 | 5A |
| 2045 | 5A |
| 2046 | 5A |
| 2047 | 5A |
| 2048 | 5A |
| 2049 | 5A |
| 2050 | 5A |
| 2051 | 5A |
| 2052 | 5A |
| 2053 | 5A |
| 2054 | 5A |
| 2055 | 5A |
| 2056 | 5A |
| 2057 | 5B |
| 2058 | 5B |

| IPHC Station Number | DFO Area |
|---|---|
| 2059 | 5B |
| 2060 | 5B |
| 2061 | 5B |
| 2062 | 5B |
| 2063 | 5B |
| 2064 | 5B |
| 2065 | 5B |
| 2066 | 5B |
| 2067 | 5B |
| 2068 | 5B |
| 2069 | 5B |
| 2070 | 5B |
| 2071 | 5B |
| 2072 | 5B |

| IPHC Station Number | DFO Area |
|---|---|
| 2073 | 5B |
| 2074 | 5B |
| 2075 | 5B |
| 2076 | 5B |
| 2077 | 5B |
| 2078 | 5B |
| 2079 | 5B |
| 2080 | 5B |
| 2081 | 5B |
| 2082 | 5B |
| 2083 | 5B |
| 2084 | 5B |
| 2085 | 5B |
| 2086 | 5B |

Appendix 3: IPHC stations byDFO area

# St. James Stations



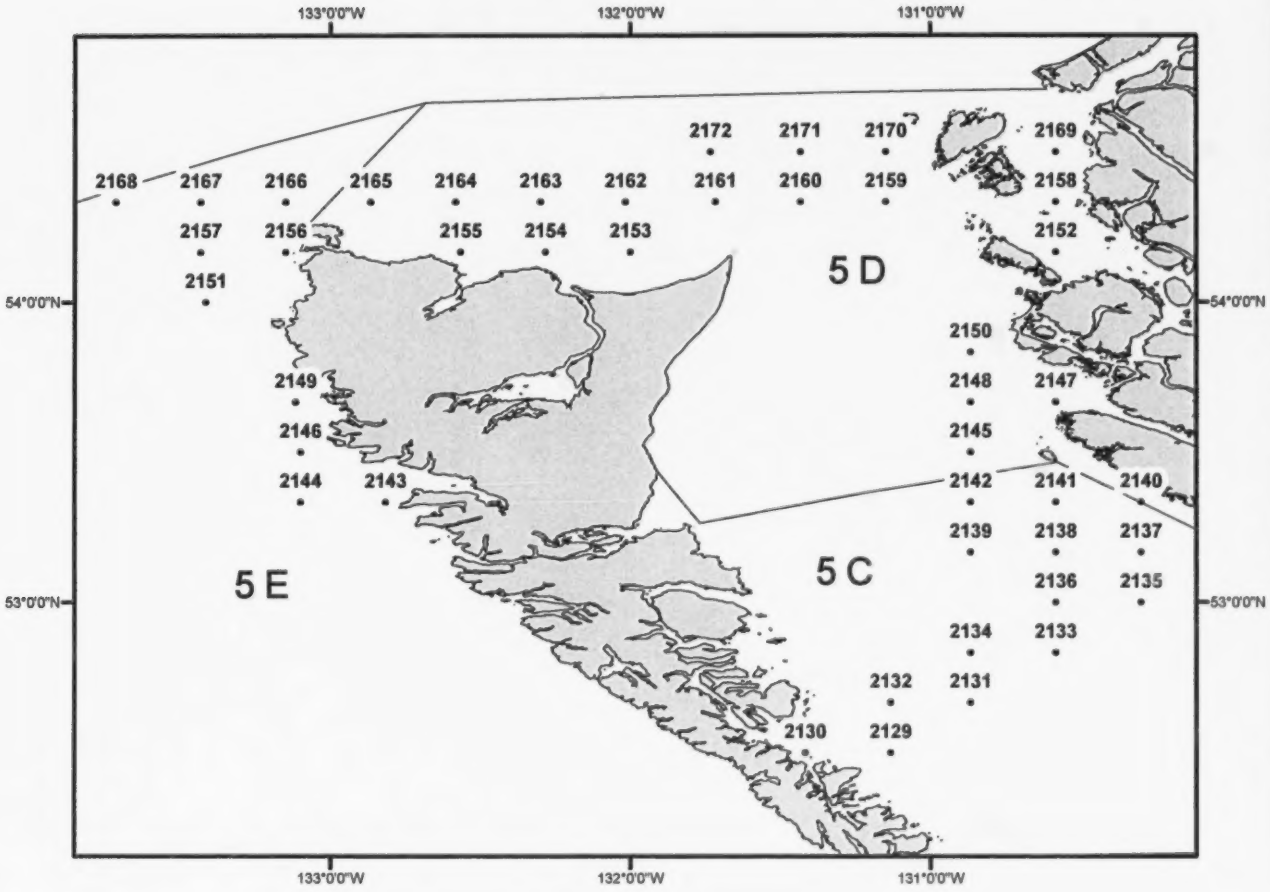

| IPHC Station Number | DFO Area |
|---|---|
| 2087 | 5B |
| 2088 | 5B |
| 2089 | 5B |
| 2090 | 5B |
| 2091 | 5B |
| 2092 | 5B |
| 2093 | 5B |
| 2094 | 5B |
| 2095 | 5B |
| 2096 | 5B |
| 2097 | 5B |
| 2098 | 5B |
| 2099 | 5B |
| 2100 | 5B |

| IPHC Station Number | DFO Area |
|---|---|
| 2101 | 5B |
| 2102 | 5B |
| 2103 | 5B |
| 2104 | 5C |
| 2105 | 5C |
| 2106 | 5C |
| 2107 | 5C |
| 2108 | 5C |
| 2109 | 5C |
| 2110 | 5C |
| 2111 | 5C |
| 2112 | 5C |
| 2113 | 5C |
| 2114 | 5C |

| IPHC Station Number | DFO Area |
|---|---|
| 2115 | 5C |
| 2116 | 5C |
| 2117 | 5C |
| 2118 | 5C |
| 2119 | 5C |
| 2120 | 5C |
| 2121 | 5C |
| 2122 | 5C |
| 2123 | 5C |
| 2124 | 5C |
| 2125 | 5C |
| 2126 | 5C |
| 2127 | 5C |
| 2128 | 5C |

Appendix 3: IPHC stations byDFO area

# Charlotte Stations




| IPHC Station Number | DFO Area |
|---|---|
| 2044 | 5A |
| 2045 | 5A |
| 2046 | 5A |
| 2047 | 5A |
| 2048 | 5A |
| 2049 | 5A |
| 2050 | 5A |
| 2051 | 5A |
| 2052 | 5A |
| 2053 | 5A |
| 2054 | 5A |
| 2055 | 5A |
| 2056 | 5A |
| 2057 | 5B |
| 2058 | 5B |

| IPHC Station Number | DFO Area |
|---|---|
| 2059 | 5B |
| 2060 | 5B |
| 2061 | 5B |
| 2062 | 5B |
| 2063 | 5B |
| 2064 | 5B |
| 2065 | 5B |
| 2066 | 5B |
| 2067 | 5B |
| 2068 | 5B |
| 2069 | 5B |
| 2070 | 5B |
| 2071 | 5B |
| 2072 | 5B |

| IPHC Station Number | DFO Area |
|---|---|
| 2073 | 5B |
| 2074 | 5B |
| 2075 | 5B |
| 2076 | 5B |
| 2077 | 5B |
| 2078 | 5B |
| 2079 | 5B |
| 2080 | 5B |
| 2081 | 5B |
| 2082 | 5B |
| 2083 | 5B |
| 2084 | 5B |
| 2085 | 5B |
| 2086 | 5B |

Appendix 3: IPHC stations byDFO area

# Appendix 4: Random number table

| | 0-5% | 5-10% | 10-15% | 15-20% | 20-25% | 25-30% | 30-35% | 35-40% | 40-45% | 45-50% | 50-55% | 55-60% | 60-65% | 65-70% | 70-75% | 75-80% | 80-85% | 85-90% | 90-95% | 95-100 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | X | X | O | O | O | O | O | O | O | X | O | X | X | X | O | O | X | X | O | X | 1 |
| 2 | O | O | O | O | O | O | X | X | X | O | X | X | O | X | O | X | O | X | O | X | 2 |
| 3 | O | O | O | O | O | O | X | X | X | O | O | X | X | O | X | O | X | X | X | X | 3 |
| 4 | O | O | O | O | O | O | O | O | O | O | X | O | O | X | O | X | X | X | X | X | 4 |
| 5 | O | O | X | X | O | O | X | O | O | X | O | O | X | X | X | X | X | X | X | X | 5 |
| 6 | O | O | O | O | O | O | O | X | X | X | X | X | O | O | O | X | O | X | X | X | 6 |
| 7 | O | O | O | X | O | O | O | X | O | O | X | O | O | O | O | O | O | X | X | X | 7 |
| 8 | O | O | O | O | O | O | X | X | O | X | O | O | X | X | X | X | X | O | X | O | 8 |
| 9 | O | O | O | O | O | O | O | O | O | X | O | O | O | O | X | O | X | X | X | X | 9 |
| 10 | O | X | O | O | X | O | O | X | X | O | X | O | X | X | O | X | X | X | X | X | 10 |
| 11 | O | O | O | O | X | X | O | X | O | X | O | O | X | X | X | X | O | X | O | X | 11 |
| 12 | O | O | O | X | O | O | O | X | O | O | X | X | X | X | X | X | X | X | X | X | 12 |
| 13 | O | O | O | O | X | O | X | X | X | O | X | X | O | X | X | X | X | X | X | X | 13 |
| 14 | O | O | O | O | O | O | X | X | O | O | O | X | X | X | X | X | X | O | X | X | 14 |
| 15 | O | O | O | X | O | O | O | X | X | O | X | X | O | X | X | X | X | X | O | X | 15 |
| 16 | O | O | O | O | X | O | O | X | O | X | O | O | X | X | X | O | X | X | X | X | 16 |
| 17 | O | X | O | O | O | X | O | O | X | O | X | O | O | O | X | X | X | X | X | X | 17 |
| 18 | O | O | O | O | O | O | O | O | X | X | O | X | X | X | X | O | X | X | X | X | 18 |
| 19 | O | O | O | O | O | O | X | X | O | X | O | O | O | O | X | X | X | X | X | X | 19 |
| 20 | O | O | O | O | O | O | X | O | O | X | X | X | O | X | O | X | X | X | X | O | 20 |
| 21 | O | O | O | O | O | O | X | X | X | O | O | O | X | O | X | X | O | X | X | X | 21 |
| 22 | O | O | O | O | O | X | X | X | O | X | X | X | O | O | O | X | X | X | X | X | 22 |
| 23 | O | O | O | O | O | O | X | X | O | X | X | O | X | X | X | X | X | X | X | X | 23 |
| 24 | O | O | O | O | O | O | O | X | O | X | X | O | X | X | X | O | X | X | X | X | 24 |
| 25 | O | O | O | O | X | O | O | X | O | O | X | X | X | X | O | O | X | X | X | X | 25 |
| 26 | O | O | O | O | O | X | O | O | O | X | O | O | X | X | X | X | X | X | X | X | 26 |
| 27 | O | O | O | O | O | O | X | X | O | X | O | X | X | X | X | X | X | X | X | X | 27 |
| 28 | O | O | O | O | O | X | O | O | X | X | O | X | O | X | X | X | X | X | X | X | 28 |
| 29 | O | O | O | O | O | O | O | X | X | X | O | X | X | X | X | X | O | X | X | X | 29 |
| 30 | O | O | O | O | O | O | O | O | O | X | X | O | O | X | X | X | X | X | X | X | 30 |
| 31 | O | O | X | X | O | O | O | O | X | X | O | X | X | X | X | X | X | X | X | X | 31 |
| 32 | O | O | O | O | O | O | X | O | X | X | O | X | X | X | X | O | O | X | X | X | 32 |
| 33 | O | O | O | O | O | X | O | O | X | O | X | X | X | X | X | X | X | O | X | X | 33 |
| 34 | O | O | O | O | O | O | X | O | X | X | X | O | X | X | X | X | O | X | X | X | 34 |
| 35 | O | O | X | O | X | O | O | O | X | X | O | O | O | O | O | X | X | X | X | X | 35 |
| 36 | O | O | X | O | X | O | X | O | X | O | O | X | O | O | X | X | X | X | O | X | 36 |
| 37 | X | O | O | O | O | O | O | O | X | O | X | O | X | O | O | X | X | X | X | X | 37 |
| 38 | O | O | O | O | X | O | X | O | O | X | O | O | X | O | X | O | X | X | X | X | 38 |
| 39 | O | X | O | O | X | O | O | X | O | X | X | O | X | X | X | X | X | O | X | X | 39 |
| 40 | O | O | O | O | O | X | O | O | O | O | O | O | X | X | O | X | X | X | X | X | 40 |
| 41 | O | O | O | O | X | O | X | O | X | X | O | X | O | X | X | X | X | X | X | X | 41 |
| 42 | X | X | O | X | O | O | X | X | O | O | X | O | X | X | O | X | X | X | X | X | 42 |
| 43 | O | O | O | X | O | X | O | X | O | X | O | O | X | X | O | X | X | X | X | X | 43 |
| 44 | O | O | X | O | O | O | X | X | O | X | X | X | X | O | X | O | X | X | X | X | 44 |
| 45 | O | O | O | O | O | O | X | O | O | X | X | X | X | X | X | X | X | X | X | X | 45 |
| 46 | O | O | O | O | O | O | X | O | O | O | O | X | X | O | X | X | X | X | X | X | 46 |
| 47 | O | O | O | O | X | O | O | O | X | X | O | X | X | O | X | X | X | X | X | X | 47 |
| 48 | O | O | O | O | O | O | O | X | X | O | O | O | O | O | X | X | X | O | X | X | 48 |
| 49 | O | O | O | O | X | O | X | O | X | O | O | X | O | X | X | X | X | X | X | X | 49 |
| 50 | O | O | X | X | O | O | X | O | O | X | X | X | O | X | X | O | X | X | X | X | 50 |

# How to use the random sample table

In order to do a true random sub-sample, you must wait until all rockfish caught on the set have been brought onboard. If you begin sub-sampling before haul back is finished then every rockfish will not have an equal opportunity to be selected and the sub-sample will not be randomly chosen.

1. Count the total number of pieces in the group you want to sub-sample (eg. 82 yelloweye)
2. Determine the number of fish needed to reach the correct sub-sample size (eg. 50 of 82 yelloweye)
3. Calculate the percentage of the total needed to reach the desired sampling rate, rounding to the nearest percent (eg. 50 out of 82 yelloweye = 61%)
4. Locate the random sample table (RST) column that matches the desired sampling rate. The RST consists of rows of 0's and X's: each digit represents one fish, and indicates whether or not you should include that fish in the sub-sample.

   0 = do not sample

   X = sample this fish
5. Starting at the top left corner or the table and reading across the rows as if reading a book, assign a 0 or X to each fish. To do this the deck sampler should hold the fish up one at a time, and the shack sampler will direct them to eliminate or add the fish to sub-sample, according to the RST. The deck sampler should not be able to read the RST as they choose which fish to present next.

# Notes

Appendix B. Summary of set specifications by vessel, including set number, IPHC station number, date, location (start and end latitudes and longitudes in degrees, decimal minutes), depths (minimum, maximum and average in metres) and times (end deployment and begin retrieval).

**Vessel PROUD VENTURE**

| Set | Station | Date | Start Lat | Start Lon | End Lat | End Lon | Min Depth (m) | Max Depth (m) | Avg. Depth (m) | End Deployment | Begin Retrieval |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2003 | 28-May-09 | 48° 28.96' | 125° 22.99' | 48° 31.14' | 125° 23' | 70 | 82 | 76 | 6:17 am | 11:32 am |
| 2 | 2004 | 28-May-09 | 48° 30.01' | 125° 36.39' | 48° 30' | 125° 39.46' | 52 | 70 | 61 | 7:46 am | 2:18 pm |
| 3 | 2001 | 28-May-09 | 48° 20.95' | 125° 38' | 48° 18.6' | 125° 38' | 75 | 77 | 76 | 9:13 am | 5:01 pm |
| 4 | 2002 | 29-May-09 | 48° 19.4' | 125° 53' | 48° 21.27' | 125° 53' | 114 | 210 | 162 | 5:19 am | 10:38 am |
| 5 | 2005 | 29-May-09 | 48° 30' | 125° 51.49' | 48° 30' | 125° 54.57' | 56 | 59 | 57 | 6:58 am | 2:06 pm |
| 6 | 2006 | 29-May-09 | 48° 30' | 126° 5.63' | 48° 30' | 126° 8.65' | 103 | 114 | 108 | 8:13 am | 4:58 pm |
| 7 | 2009 | 30-May-09 | 48° 40.04' | 125° 39.78' | 48° 39.99' | 125° 36.86' | 50 | 79 | 64 | 5:04 am | 11:27 am |
| 8 | 2008 | 30-May-09 | 48° 40' | 125° 23.7' | 48° 39.99' | 125° 20.63' | 36 | 44 | 40 | 6:34 am | 2:29 pm |
| 9 | 2007 | 30-May-09 | 48° 40' | 125° 8.62' | 48° 40.05' | 125° 5.51' | 32 | 38 | 35 | 7:57 am | 5:17 pm |
| 10 | 2019 | 31-May-09 | 49° 10.49' | 126° 20.58' | 49° 10.51' | 126° 23.62' | 42 | 47 | 44 | 5:02 am | 11:18 am |
| 11 | 2023 | 31-May-09 | 49° 19.99' | 126° 21.49' | 49° 20.01' | 126° 24.64' | 22 | 23 | 22 | 6:41 am | 2:05 pm |
| 12 | 2024 | 31-May-09 | 49° 19.99' | 126° 37.03' | 49° 19.99' | 126° 40.17' | 35 | 52 | 43 | 8:09 am | 4:45 pm |
| 13 | 2020 | 31-May-09 | 49° 10.02' | 126° 39.22' | 49° 10.02' | 126° 36.08' | 63 | 71 | 67 | 9:52 am | 8:09 pm |
| 14 | 2021 | 01-Jun-09 | 49° 9.09' | 126° 53' | 49° 11.02' | 126° 52.98' | 91 | 102 | 96 | 5:03 am | 10:22 pm |
| 15 | 2025 | 01-Jun-09 | 49° 19.15' | 126° 53.04' | 49° 21.15' | 126° 53.03' | 75 | 79 | 77 | 6:38 am | 11:59 am |
| 16 | 2028 | 01-Jun-09 | 49° 28.93' | 126° 53' | 49° 30.88' | 126° 52.99' | 48 | 55 | 51 | 7:57 am | 2:50 pm |
| 17 | 2027 | 01-Jun-09 | 49° 30.57' | 126° 37.99' | 49° 28.54' | 126° 38.01' | 23 | 23 | 23 | 9:39 am | 5:52 pm |
| 18 | 2018 | 02-Jun-09 | 49° 0.01' | 126° 39.45' | 49° 0.02' | 126° 36.34' | 114 | 180 | 147 | 6:01 am | 11:49 am |
| 19 | 2017 | 02-Jun-09 | 49° 0' | 126° 24.54' | 49° 0' | 126° 21.52' | 74 | 80 | 77 | 7:20 am | 3:08 pm |
| 20 | 2016 | 02-Jun-09 | 49° 0' | 126° 9.56' | 49° 0' | 126° 6.61' | 37 | 42 | 39 | 8:42 am | 6:06 pm |
| 21 | 2013 | 03-Jun-09 | 48° 51.1' | 125° 53' | 48° 49.26' | 125° 52.97' | 30 | 33 | 31 | 5:05 am | 10:45 am |
| 22 | 2010 | 03-Jun-09 | 48° 39.98' | 125° 54.35' | 48° 39.99' | 125° 51.51' | 39 | 43 | 41 | 6:46 am | 2:09 pm |
| 23 | 2012 | 03-Jun-09 | 48° 49.11' | 125° 37.04' | 48° 51.26' | 125° 37' | 24 | 27 | 25 | 8:53 am | 5:23 pm |
| 24 | 2014 | 06-Jun-09 | 48° 50' | 126° 6.4' | 48° 50' | 126° 9.64' | 53 | 64 | 58 | 5:01 am | 11:02 am |
| 25 | 2011 | 06-Jun-09 | 48° 40.02' | 126° 6.52' | 48° 40' | 126° 9.65' | 74 | 82 | 78 | 7:03 am | 2:12 pm |
| 26 | 2015 | 06-Jun-09 | 48° 50.01' | 126° 24.37' | 48° 50' | 126° 21.38' | 97 | 99 | 98 | 9:28 am | 5:43 pm |
| 27 | 2026 | 07-Jun-09 | 49° 19.99' | 127° 7.78' | 49° 20' | 127° 10.72' | 97 | 118 | 107 | 5:09 am | 12:33 pm |
| 28 | 2029 | 07-Jun-09 | 49° 30.01' | 127° 11.12' | 49° 30' | 127° 7.92' | 78 | 84 | 81 | 6:57 am | 4:12 pm |
| 29 | 2030 | 07-Jun-09 | 49° 40' | 127° 7.72' | 49° 39.99' | 127° 10.87' | 61 | 66 | 63 | 9:17 am | 7:27 pm |
| 30 | 2031 | 08-Jun-09 | 49° 39.55' | 127° 24.01' | 49° 41.47' | 127° 24.03' | 71 | 120 | 95 | 5:03 am | 3:18 pm |
| 31 | 2032 | 08-Jun-09 | 49° 50' | 127° 22.68' | 49° 49.99' | 127° 25.49' | 42 | 45 | 43 | 6:35 am | 12:15 pm |
| 32 | 2033 | 08-Jun-09 | 49° 50' | 127° 38.33' | 49° 50' | 127° 41.18' | 76 | 99 | 87 | 8:11 am | 7:14 pm |
| 33 | 2034 | 08-Jun-09 | 49° 59.97' | 127° 41.27' | 49° 59.99' | 127° 38.48' | 43 | 52 | 47 | 9:52 am | 10:27 pm |
| 34 | 2035 | 09-Jun-09 | 50° 19.12' | 128° 11' | 50° 21.22' | 128° 11' | 85 | 91 | 88 | 5:08 am | 10:14 am |
| 35 | 2037 | 09-Jun-09 | 50° 29.87' | 128° 27' | 50° 31.59' | 128° 27' | 100 | 104 | 102 | 7:07 am | 2:20 pm |
| 36 | 2047 | 10-Jun-09 | 50° 59.99' | 128° 42.6' | 51° 0' | 128° 46.03' | 35 | 38 | 36 | 6:36 am | 12:09 pm |
| 37 | 2054 | 10-Jun-09 | 51° 9.99' | 128° 58.61' | 51° 10.01' | 129° 1.81' | 72 | 75 | 73 | 8:34 am | 3:55 pm |
| 38 | 2053 | 10-Jun-09 | 51° 10' | 128° 45.6' | 51° 10' | 128° 42.49' | 53 | 58 | 55 | 10:18 am | 7:03 pm |
| 39 | 2060 | 11-Jun-09 | 51° 20' | 128° 44.49' | 51° 20.01' | 128° 41.27' | 114 | 118 | 116 | 5:05 am | 11:35 am |
| 40 | 2067 | 11-Jun-09 | 51° 29.99' | 128° 44.52' | 51° 29.99' | 128° 41.51' | 27 | 67 | 47 | 6:54 am | 2:46 pm |
| 41 | 2066 | 11-Jun-09 | 51° 30' | 128° 28.47' | 51° 29.99' | 128° 25.32' | 102 | 105 | 103 | 8:17 am | 5:58 pm |
| 42 | 2059 | 11-Jun-09 | 51° 20' | 128° 25.26' | 51° 19.99' | 128° 28.74' | 79 | 86 | 82 | 9:53 am | 9:09 pm |
| 43 | 2058 | 12-Jun-09 | 51° 20' | 128° 12.57' | 51° 20.01' | 128° 9.35' | 39 | 53 | 46 | 5:00 am | 10:46 am |
| 44 | 2065 | 12-Jun-09 | 51° 29.06' | 128° 11' | 51° 31.11' | 128° 10.99' | 38 | 49 | 43 | 6:37 am | 1:58 pm |

Appendix B continued on next page.

**Vessel PROUD VENTURE**

| Set | Station | Date | Start Lat | Start Lon | End Lat | End Lon | Min Depth (m) | Max Depth (m) | Avg. Depth (m) | End Deployment | Begin Retrieval |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 2057 | 12-Jun-09 | 51° 20.88' | 127° 54.97' | 51° 18.8' | 127° 54.82' | 67 | 76 | 71 | 9:05 am | 5:34 pm |
| 46 | 2042 | 15-Jun-09 | 50° 58.98' | 128° 13.02' | 51° 0.99' | 128° 13' | 42 | 69 | 55 | 5:05 am | 10:30 am |
| 47 | 2041 | 15-Jun-09 | 51° 0' | 127° 58.47' | 51° 0' | 127° 55.28' | 62 | 66 | 64 | 6:34 am | 1:21 pm |
| 48 | 2043 | 15-Jun-09 | 51° 9.03' | 127° 56.02' | 51° 11.05' | 127° 55.99' | 65 | 75 | 70 | 8:04 am | 4:21 pm |
| 49 | 2051 | 16-Jun-09 | 51° 10.87' | 128° 12.02' | 51° 8.67' | 128° 11.97' | 44 | 73 | 58 | 5:01 am | 11:42 am |
| 50 | 2052 | 16-Jun-09 | 51° 9.25' | 128° 28.02' | 51° 11.32' | 128° 27.96' | 105 | 109 | 107 | 6:45 am | 2:42 pm |
| 51 | 2046 | 16-Jun-09 | 50° 59.24' | 128° 28' | 51° 1.22' | 128° 28' | 51 | 54 | 52 | 9:09 am | 5:49 pm |
| 52 | 2040 | 17-Jun-09 | 50° 49.07' | 128° 27.99' | 50° 51.09' | 128° 28.02' | 31 | 41 | 36 | 6:23 am | 12:42 pm |
| 53 | 2038 | 17-Jun-09 | 50° 39.99' | 128° 26.71' | 50° 40' | 128° 29.87' | 44 | 60 | 52 | 8:24 am | 4:00 pm |
| 54 | 2039 | 17-Jun-09 | 50° 40' | 128° 42.56' | 50° 40' | 128° 45.79' | 100 | 110 | 105 | 9:51 am | 6:52 pm |
| 55 | 2045 | 18-Jun-09 | 50° 49' | 129° 16.01' | 50° 51.24' | 129° 16' | 63 | 71 | 67 | 5:02 am | 11:52 am |
| 56 | 2044 | 18-Jun-09 | 50° 50' | 129° 1.45' | 50° 49.99' | 128° 58.3' | 43 | 51 | 47 | 6:36 am | 3:20 pm |
| 57 | 2048 | 18-Jun-09 | 50° 59.99' | 128° 58.84' | 51° 0.01' | 129° 1.71' | 45 | 48 | 46 | 8:14 am | 6:03 pm |
| 58 | 2049 | 18-Jun-09 | 50° 59.99' | 129° 16.9' | 51° 0' | 129° 13.76' | 83 | 90 | 86 | 10:08 am | 9:31 pm |
| 59 | 2050 | 19-Jun-09 | 50° 59.99' | 129° 33.16' | 51° 0.01' | 129° 29.86' | 128 | 134 | 131 | 5:09 am | 12:17 pm |
| 60 | 2055 | 19-Jun-09 | 51° 9.98' | 129° 17.53' | 51° 10.02' | 129° 14.4' | 133 | 154 | 143 | 8:03 am | 4:39 pm |
| 61 | 2056 | 19-Jun-09 | 51° 10' | 129° 30.43' | 51° 10' | 129° 33.75' | 150 | 158 | 154 | 10:03 am | 7:59 pm |
| 62 | 2063 | 20-Jun-09 | 51° 20' | 129° 32.74' | 51° 19.99' | 129° 29.78' | 109 | 114 | 111 | 5:17 am | 11:33 am |
| 63 | 2070 | 20-Jun-09 | 51° 29.04' | 129° 30.98' | 51° 31.25' | 129° 30.99' | 51 | 62 | 56 | 6:46 am | 3:27 pm |
| 64 | 2069 | 20-Jun-09 | 51° 29.2' | 129° 16.01' | 51° 31.3' | 129° 16' | 26 | 28 | 27 | 8:34 am | 6:51 pm |
| 65 | 2068 | 21-Jun-09 | 51° 30' | 128° 57.56' | 51° 30.01' | 129° 1.01' | 23 | 25 | 24 | 5:03 am | 11:07 am |
| 66 | 2062 | 21-Jun-09 | 51° 19.99' | 129° 16.11' | 51° 19.99' | 129° 13' | 124 | 130 | 127 | 7:42 am | 2:39 pm |
| 67 | 2061 | 21-Jun-09 | 51° 20.01' | 129° 0.4' | 51° 19.99' | 128° 57.19' | 133 | 137 | 135 | 9:11 am | 6:25 pm |
| 68 | 2073 | 25-Jun-09 | 51° 40' | 128° 24.37' | 51° 40' | 128° 27.4' | 79 | 81 | 80 | 5:03 am | 11:38 am |
| 69 | 2078 | 25-Jun-09 | 51° 50.96' | 128° 26' | 51° 48.92' | 128° 26.01' | 88 | 92 | 90 | 7:04 am | 3:03 pm |
| 70 | 2079 | 25-Jun-09 | 51° 49.99' | 128° 43.62' | 51° 50' | 128° 40.37' | 42 | 75 | 58 | 9:17 am | 6:14 pm |
| 71 | 2085 | 26-Jun-09 | 52° 0' | 129° 12.54' | 52° 0' | 129° 15.97' | 98 | 102 | 100 | 5:02 am | 11:08 am |
| 72 | 2101 | 26-Jun-09 | 52° 9.97' | 129° 15.77' | 52° 10.01' | 129° 12.75' | 94 | 99 | 96 | 6:56 am | 2:02 pm |
| 73 | 2100 | 26-Jun-09 | 52° 10' | 128° 58.63' | 52° 10.01' | 128° 55.61' | 85 | 93 | 89 | 8:34 am | 4:53 pm |
| 74 | 2086 | 28-Jun-09 | 52° 10.96' | 128° 41.01' | 52° 9.19' | 128° 41' | 112 | 137 | 124 | 5:13 am | 12:02 pm |
| 75 | 2083 | 28-Jun-09 | 52° 0.9' | 128° 42' | 51° 58.89' | 128° 42' | 89 | 92 | 90 | 7:02 am | 3:36 pm |
| 76 | 2084 | 28-Jun-09 | 52° 0.96' | 128° 58' | 51° 58.99' | 128° 58.02' | 69 | 95 | 82 | 9:12 am | 6:56 pm |
| 77 | 2102 | 29-Jun-09 | 52° 10' | 129° 28.49' | 52° 10' | 129° 31.83' | 108 | 121 | 114 | 5:02 am | 10:39 am |
| 78 | 2103 | 29-Jun-09 | 52° 10' | 129° 44.42' | 52° 10' | 129° 47.5' | 112 | 118 | 115 | 6:31 am | 1:42 pm |
| 79 | 2094 | 29-Jun-09 | 52° 0' | 129° 31.68' | 52° 0.01' | 129° 28.55' | 109 | 118 | 113 | 8:42 am | 6:16 pm |
| 80 | 2082 | 30-Jun-09 | 51° 50' | 129° 32.61' | 51° 50' | 129° 29.33' | 136 | 142 | 139 | 5:04 am | 11:17 am |
| 81 | 2075 | 30-Jun-09 | 51° 39.99' | 129° 14.4' | 51° 40' | 129° 17.36' | 27 | 33 | 30 | 7:22 am | 3:14 pm |
| 82 | 2076 | 30-Jun-09 | 51° 40.01' | 129° 29.31' | 51° 40' | 129° 32.37' | 46 | 59 | 52 | 8:54 am | 6:35 pm |
| 83 | 2080 | 01-Jul-09 | 51° 50.01' | 128° 56.31' | 51° 50' | 128° 59.54' | 40 | 51 | 45 | 5:02 am | 11:47 am |
| 84 | 2081 | 01-Jul-09 | 51° 50.02' | 129° 12.42' | 51° 50' | 129° 15.69' | 67 | 69 | 68 | 6:47 am | 2:49 pm |
| 85 | 2074 | 01-Jul-09 | 51° 40' | 129° 0.7' | 51° 39.97' | 128° 57.28' | 26 | 35 | 30 | 9:07 am | 6:27 pm |
| 86 | 2077 | 05-Jul-09 | 51° 40.01' | 129° 45.22' | 51° 40' | 129° 48.64' | 124 | 160 | 142 | 5:38 am | 11:50 am |
| 87 | 2087 | 05-Jul-09 | 51° 40' | 130° 1.64' | 51° 40' | 130° 5.01' | 190 | 196 | 193 | 7:09 am | 3:00 pm |
| 88 | 2089 | 05-Jul-09 | 51° 49.97' | 129° 48.3' | 51° 49.97' | 129° 45.17' | 134 | 150 | 142 | 9:46 am | 7:43 pm |

Appendix B continued on next page.

**Vessel PROUD VENTURE**

| Set | Station | Date | Start Lat | Start Lon | End Lat | End Lon | Min Depth (m) | Max Depth (m) | Avg. Depth (m) | End Deployment | Begin Retrieval |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | 2096 | 06-Jul-09 | 51° 59.99' | 130° 1.38' | 51° 59.99' | 130° 4.87' | 76 | 80 | 78 | 5:06 am | 11:21 am |
| 90 | 2090 | 06-Jul-09 | 51° 49.99' | 130° 1.78' | 51° 50.02' | 130° 5.36' | 98 | 103 | 100 | 7:01 am | 2:54 pm |
| 91 | 2095 | 06-Jul-09 | 51° 59.2' | 129° 46.92' | 52° 1.32' | 129° 46.99' | 61 | 64 | 62 | 9:26 am | 7:03 pm |
| 92 | 2104 | 07-Jul-09 | 52° 10' | 130° 1.29' | 52° 10' | 130° 4.61' | 88 | 106 | 97 | 5:02 am | 10:42 am |
| 93 | 2111 | 07-Jul-09 | 52° 20' | 130° 4.49' | 52° 20' | 130° 1.16' | 100 | 145 | 122 | 6:49 am | 1:54 pm |
| 94 | 2110 | 07-Jul-09 | 52° 20' | 129° 47.61' | 52° 20.01' | 129° 44.33' | 114 | 116 | 115 | 8:14 am | 5:06 pm |
| 95 | 2117 | 08-Jul-09 | 52° 30' | 130° 0.26' | 52° 30' | 130° 3.59' | 144 | 152 | 148 | 5:04 am | 11:24 am |
| 96 | 2122 | 08-Jul-09 | 52° 39.99' | 130° 3.45' | 52° 40' | 130° 0' | 145 | 146 | 145 | 6:55 am | 2:45 pm |
| 97 | 2121 | 08-Jul-09 | 52° 40' | 129° 47.72' | 52° 40' | 129° 44.49' | 82 | 109 | 95 | 8:11 am | 5:52 pm |
| 98 | 2116 | 08-Jul-09 | 52° 30' | 129° 44.42' | 52° 29.99' | 129° 47.67' | 90 | 108 | 99 | 9:53 am | 8:54 pm |
| 99 | 2115 | 09-Jul-09 | 52° 30.02' | 129° 30.55' | 52° 30.01' | 129° 33.83' | 34 | 61 | 47 | 5:17 am | 11:15 am |
| 100 | 2108 | 09-Jul-09 | 52° 20.89' | 129° 12.98' | 52° 18.78' | 129° 12.99' | 78 | 88 | 83 | 7:45 am | 3:33 pm |
| 101 | 2109 | 09-Jul-09 | 52° 19.01' | 129° 29.99' | 52° 20.91' | 129° 30' | 87 | 101 | 94 | 9:33 am | 6:59 pm |
| 102 | 2112 | 10-Jul-09 | 52° 19.13' | 130° 19' | 52° 21.1' | 130° 19' | 188 | 198 | 193 | 5:10 am | 12:25 pm |
| 103 | 2113 | 10-Jul-09 | 52° 19.1' | 130° 34.99' | 52° 21.02' | 130° 34.99' | 90 | 95 | 92 | 7:04 am | 3:49 pm |
| 104 | 2119 | 10-Jul-09 | 52° 30.79' | 130° 35' | 52° 28.69' | 130° 34.99' | 64 | 69 | 66 | 8:59 am | 6:50 pm |
| 105 | 2118 | 10-Jul-09 | 52° 30.86' | 130° 19.01' | 52° 29.03' | 130° 18.99' | 132 | 147 | 139 | 10:48 am | 9:53 pm |
| 106 | 2128 | 14-Jul-09 | 53° 1.2' | 130° 2' | 52° 59.22' | 130° 2' | 74 | 118 | 96 | 5:02 am | 10:42 am |
| 107 | 2127 | 14-Jul-09 | 53° 0' | 129° 46.78' | 52° 59.99' | 129° 43.66' | 119 | 131 | 125 | 6:40 am | 1:48 pm |
| 108 | 2125 | 14-Jul-09 | 52° 50.01' | 130° 0.37' | 52° 50' | 130° 3.58' | 141 | 143 | 142 | 8:52 am | 5:58 pm |
| 109 | 2126 | 15-Jul-09 | 52° 50' | 130° 17.24' | 52° 50' | 130° 20.62' | 108 | 121 | 114 | 5:09 am | 10:34 am |
| 110 | 2123 | 15-Jul-09 | 52° 40.99' | 130° 19.01' | 52° 38.95' | 130° 19' | 122 | 125 | 123 | 6:46 am | 1:45 pm |
| 111 | 2124 | 15-Jul-09 | 52° 40' | 130° 33.26' | 52° 39.99' | 130° 36.5' | 78 | 81 | 79 | 8:14 am | 5:30 pm |
| 112 | 2120 | 16-Jul-09 | 52° 28.54' | 130° 52' | 52° 30.68' | 130° 52' | 56 | 61 | 58 | 5:02 am | 11:45 am |
| 113 | 2114 | 16-Jul-09 | 52° 21.03' | 130° 52' | 52° 19.09' | 130° 52' | 77 | 84 | 80 | 6:51 am | 2:38 pm |
| 114 | 2107 | 16-Jul-09 | 52° 9.99' | 130° 53.7' | 52° 10.01' | 130° 50.42' | 122 | 124 | 123 | 8:27 am | 6:16 pm |
| 115 | 2106 | 17-Jul-09 | 52° 8.98' | 130° 35' | 52° 11' | 130° 35.01' | 105 | 109 | 107 | 5:32 am | 12:55 pm |
| 116 | 2105 | 17-Jul-09 | 52° 9.24' | 130° 19.02' | 52° 11.42' | 130° 19' | 205 | 223 | 214 | 7:44 am | 4:19 pm |
| 117 | 2097 | 17-Jul-09 | 51° 58.88' | 130° 19' | 52° 0.98' | 130° 19.01' | 193 | 199 | 196 | 10:34 am | 8:14 pm |
| 118 | 2098 | 18-Jul-09 | 51° 59.04' | 130° 34.99' | 52° 1.09' | 130° 34.98' | 125 | 162 | 143 | 5:03 am | 11:51 am |
| 119 | 2099 | 18-Jul-09 | 51° 58.87' | 130° 52' | 52° 0.86' | 130° 52.05' | 91 | 120 | 105 | 7:19 am | 3:32 pm |
| 120 | 2093 | 18-Jul-09 | 51° 51.12' | 130° 51.99' | 51° 49.19' | 130° 52' | 98 | 112 | 104 | 9:14 am | 6:37 pm |
| 121 | 2092 | 19-Jul-09 | 51° 49.99' | 130° 33.39' | 51° 50' | 130° 36.81' | 152 | 164 | 158 | 5:33 am | 12:06 pm |
| 122 | 2091 | 19-Jul-09 | 51° 49.99' | 130° 20' | 51° 50.01' | 130° 17.45' | 117 | 119 | 118 | 7:27 am | 3:59 pm |
| 123 | 2088 | 19-Jul-09 | 51° 40.01' | 130° 20.22' | 51° 40.01' | 130° 16.74' | 137 | 147 | 142 | 9:28 am | 7:35 pm |
| 124 | 2072 | 20-Jul-09 | 51° 30.01' | 130° 5.06' | 51° 29.99' | 130° 1.86' | 141 | 202 | 171 | 5:02 am | 10:43 am |
| 125 | 2071 | 20-Jul-09 | 51° 30' | 129° 48.52' | 51° 30' | 129° 45.31' | 89 | 95 | 92 | 6:29 am | 3:06 pm |
| 126 | 2064 | 20-Jul-09 | 51° 20' | 129° 45.42' | 51° 20' | 129° 48.5' | 130 | 135 | 132 | 8:17 am | 6:23 pm |

Appendix B continued on next page.

Vessel VANISLE

| Set | Station | Date | Start Lat | Start Lon | End Lat | End Lon | Min Depth (m) | Max Depth (m) | Avg. Depth (m) | End Deployment | Begin Retrieval |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 2130 | 28-Jun-09 | 52° 29.41' | 131° 25.35' | 52° 31.24' | 131° 24.18' | 54 | 162 | 108 | 5:00 am | 10:25 am |
| 51 | 2129 | 28-Jun-09 | 52° 29.12' | 131° 8.71' | 52° 30.84' | 131° 6.82' | 30 | 90 | 60 | 6:30 am | 2:01 pm |
| 52 | 2132 | 28-Jun-09 | 52° 40.75' | 131° 6.72' | 52° 39.32' | 131° 8.74' | 35 | 47 | 41 | 8:10 am | 5:22 pm |
| 53 | 2131 | 29-Jun-09 | 52° 39.01' | 130° 53.07' | 52° 40.48' | 130° 50.95' | 52 | 54 | 53 | 5:05 am | 10:36 am |
| 54 | 2134 | 29-Jun-09 | 52° 49.45' | 130° 52.32' | 52° 47.55' | 130° 52.9' | 29 | 32 | 30 | 6:35 am | 1:36 pm |
| 55 | 2133 | 29-Jun-09 | 52° 50.7' | 130° 34.77' | 52° 49.03' | 130° 36.36' | 63 | 64 | 63 | 8:25 am | 4:50 pm |
| 56 | 2136 | 30-Jun-09 | 52° 58.93' | 130° 35.43' | 53° 0.73' | 130° 34.12' | 49 | 60 | 54 | 5:00 am | 10:39 am |
| 57 | 2135 | 30-Jun-09 | 52° 59.08' | 130° 18.9' | 53° 0.54' | 130° 16.91' | 114 | 117 | 115 | 6:35 am | 1:52 pm |
| 58 | 2137 | 30-Jun-09 | 53° 9.29' | 130° 18.42' | 53° 11.08' | 130° 17.18' | 53 | 121 | 87 | 8:05 am | 5:20 pm |
| 59 | 2140 | 01-Jul-09 | 53° 18.98' | 130° 18.92' | 53° 20.62' | 130° 17.06' | 50 | 70 | 60 | 5:15 am | 10:39 am |
| 60 | 2141 | 01-Jul-09 | 53° 20.65' | 130° 33.7' | 53° 19.33' | 130° 36.45' | 31 | 88 | 59 | 6:50 am | 2:02 pm |
| 61 | 2138 | 01-Jul-09 | 53° 10.91' | 130° 34.05' | 53° 9.28' | 130° 35.75' | 100 | 109 | 104 | 8:15 am | 5:15 pm |
| 62 | 2139 | 02-Jul-09 | 53° 9.13' | 130° 52.36' | 53° 10.89' | 130° 51.21' | 56 | 62 | 59 | 5:02 am | 11:30 am |
| 63 | 2142 | 02-Jul-09 | 53° 19.01' | 130° 53.14' | 53° 20.66' | 130° 51.46' | 66 | 80 | 73 | 6:50 am | 3:01 pm |
| 64 | 2145 | 02-Jul-09 | 53° 28.97' | 130° 52.71' | 53° 30.67' | 130° 51.26' | 51 | 54 | 52 | 8:25 am | 6:17 pm |
| 65 | 2148 | 03-Jul-09 | 53° 39' | 130° 52.63' | 53° 40.56' | 130° 51.28' | 24 | 26 | 25 | 5:00 am | 10:21 am |
| 66 | 2147 | 03-Jul-09 | 53° 39.14' | 130° 36.63' | 53° 40.31' | 130° 34.01' | 16 | 32 | 24 | 6:30 am | 1:26 pm |
| 67 | 2150 | 03-Jul-09 | 53° 50.51' | 130° 50.81' | 53° 49.13' | 130° 53.2' | 43 | 52 | 47 | 8:40 am | 3:22 pm |
| 68 | 2143 | 07-Jul-09 | 53° 20.78' | 132° 48.06' | 53° 19.08' | 132° 49.82' | 61 | 84 | 72 | 5:03 am | 10:29 am |
| 69 | 2144 | 08-Jul-09 | 53° 21.66' | 133° 4.61' | 53° 19.82' | 133° 6.09' | 109 | 140 | 124 | 6:35 am | 2:14 pm |
| 70 | 2146 | 08-Jul-09 | 53° 31.12' | 133° 5.11' | 53° 29.27' | 133° 6.61' | 125 | 276 | 200 | 8:25 am | 6:02 pm |
| 71 | 2149 | 09-Jul-09 | 53° 39.46' | 133° 7.49' | 53° 41.1' | 133° 5.71' | 67 | 87 | 77 | 5:12 am | 11:43 am |
| 72 | 2151 | 09-Jul-09 | 53° 58.57' | 133° 27.05' | 54° 0.32' | 133° 25.15' | 41 | 45 | 43 | 8:20 am | 5:14 pm |
| 73 | 2157 | 10-Jul-09 | 54° 10.58' | 133° 24.63' | 54° 9.52' | 133° 27.8' | 211 | 225 | 218 | 5:30 am | 10:40 am |
| 74 | 2158 | 10-Jul-09 | 54° 19.06' | 133° 43.68' | 54° 20.75' | 133° 42' | 132 | 136 | 134 | 7:25 am | 2:57 pm |
| 75 | 2167 | 09-Jul-09 | 54° 19.32' | 133° 27.22' | 54° 20.5' | 133° 25.2' | 114 | 127 | 120 | 6:45 am | 6:38 pm |
| 76 | 2156 | 11-Jul-09 | 54° 10.79' | 133° 7.79' | 54° 9.38' | 133° 10.35' | 20 | 42 | 31 | 5:10 am | 11:02 am |
| 77 | 2166 | 11-Jul-09 | 54° 19.33' | 133° 9.79' | 54° 20.91' | 133° 8.52' | 252 | 255 | 253 | 6:50 am | 2:45 pm |
| 78 | 2165 | 11-Jul-09 | 54° 21.07' | 132° 51.04' | 54° 19.32' | 132° 52.72' | 210 | 215 | 212 | 8:35 am | 7:31 pm |
| 79 | 2155 | 14-Jul-09 | 54° 9.24' | 132° 34.69' | 54° 10.81' | 132° 32.6' | 44 | 53 | 48 | 5:20 am | 10:10 am |
| 80 | 2164 | 14-Jul-09 | 54° 19.27' | 132° 35.31' | 54° 20.92' | 132° 33.7' | 143 | 148 | 145 | 6:40 am | 1:01 pm |
| 81 | 2163 | 14-Jul-09 | 54° 20.56' | 132° 16.95' | 54° 19.12' | 132° 19.34' | 116 | 130 | 123 | 8:10 am | 4:19 pm |
| 82 | 2154 | 15-Jul-09 | 54° 9.09' | 132° 17.89' | 54° 10.75' | 132° 16' | 45 | 55 | 50 | 5:00 am | 10:00 am |
| 83 | 2162 | 15-Jul-09 | 54° 19.23' | 132° 1.81' | 54° 20.92' | 131° 59.78' | 132 | 138 | 135 | 6:40 am | 1:25 pm |
| 84 | 2153 | 15-Jul-09 | 54° 10.96' | 131° 59.08' | 54° 9.27' | 132° 1' | 23 | 51 | 37 | 8:10 am | 4:15 pm |
| 85 | 2161 | 16-Jul-09 | 54° 18.93' | 131° 43.63' | 54° 20.78' | 131° 41.86' | 98 | 103 | 99 | 5:25 am | 10:42 am |
| 86 | 2172 | 16-Jul-09 | 54° 29.14' | 131° 44.34' | 54° 31.01' | 131° 42.92' | 182 | 189 | 185 | 6:45 am | 1:55 pm |
| 87 | 2171 | 16-Jul-09 | 54° 29.02' | 131° 26.76' | 54° 30.73' | 131° 24.95' | 36 | 79 | 57 | 8:10 am | 5:07 pm |
| 88 | 2170 | 17-Jul-09 | 54° 30.63' | 131° 8.19' | 54° 29.17' | 131° 9.61' | 71 | 80 | 75 | 5:00 am | 10:25 am |
| 89 | 2160 | 17-Jul-09 | 54° 20.6' | 131° 25.41' | 54° 18.91' | 131° 26.94' | 82 | 100 | 91 | 6:55 am | 2:10 pm |
| 90 | 2159 | 17-Jul-09 | 54° 19.11' | 131° 9.64' | 54° 20.75' | 131° 8.05' | 33 | 41 | 37 | 8:30 am | 5:12 pm |
| 91 | 2158 | 18-Jul-09 | 54° 19.34' | 130° 35.31' | 54° 21.21' | 130° 34.15' | 40 | 70 | 55 | 5:00 am | 10:36 am |
| 92 | 2169 | 18-Jul-09 | 54° 29.01' | 130° 35.62' | 54° 30.87' | 130° 34.31' | 59 | 70 | 64 | 6:10 am | 1:12 pm |
| 93 | 2152 | 18-Jul-09 | 54° 9.4' | 130° 36.29' | 54° 10.58' | 130° 33.57' | 42 | 67 | 54 | 9:10 am | 5:32 pm |

Appendix C. Set information by PSMFC Area, common IPHC station and year (2003 to 2009), showing number of hooks deployed, returned, with bait, empty, or with catch, separated for Pacific Halibut, North Pacific Spiny Dogfish, Redbanded Rockfish, Yelloweye Rockfish, Rougheye Rockfish, and Quillback Rockfish, with catch per 100 hooks shown for rockfish.

**Hkd** # Hooks deployed
**Hko** # Hooks observed/returned
**Nb** # Hooks with bait left intact
**Ne** # Hooks empty/bait skin
**No** # other catch (fish/invert./inanimate)
**614** # Pacific Halibut
**044** # North Pacific Spiny Dogfish
**401** # Redbanded Rockfish, catch per 100 Hooks
**442** # Yelloweye Rockfish, catch per 100 Hooks
**394** # Rougheye Rockfish, catch per 100 Hooks
**424** # Quillback Rockfish, catch per 100 Hooks

| Area | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3C/D, 5A | | | | | | | | | | | | | | | | | | |
| | 2001 | 2003 | 5 | 800 | 800 | 0 | 479 | 30 | 9 | 282 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 5 | 789 | 788 | 0 | 546 | 83 | 48 | 111 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 5 | 694 | 688 | 0 | 154 | 3 | 0 | 533 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 5 | 597 | 596 | 0 | 360 | 6 | 0 | 230 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 2 | 501 | 501 | 0 | 291 | 0 | 6 | 204 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 2 | 501 | 499 | 2 | 328 | 2 | 3 | 164 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 3 | 686 | 684 | 23 | 338 | 17 | 65 | 240 | 0 | | 1 | 0.15 | 0 | | 0 | |
| | 2002 | 2003 | 6 | 798 | 798 | 12 | 575 | 180 | 6 | 20 | 4 | 0.5 | 0 | | 0 | | 0 | |
| | | 2004 | 6 | 788 | 779 | 46 | 495 | 183 | 19 | 1 | 15 | 1.93 | 0 | | 20 | 2.57 | 0 | |
| | | 2005 | 6 | 700 | 687 | 36 | 397 | 217 | 7 | 5 | 1 | 0.15 | 0 | | 24 | 3.49 | 0 | |
| | | 2006 | 4 | 500 | 483 | 3 | 315 | 46 | 6 | 113 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 3 | 501 | 495 | 40 | 306 | 117 | 6 | 21 | 0 | | 0 | | 6 | 1.21 | 0 | |
| | | 2008 | 4 | 504 | 498 | 12 | 295 | 117 | 13 | 60 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 4 | 687 | 673 | 47 | 359 | 232 | 18 | 4 | 3 | 0.45 | 0 | | 10 | 1.49 | 0 | |
| | 2003 | 2003 | 3 | 796 | 796 | 0 | 606 | 12 | 3 | 175 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 2 | 790 | 788 | 3 | 443 | 34 | 0 | 308 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 3 | 700 | 699 | 1 | 518 | 8 | 1 | 164 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 3 | 600 | 595 | 1 | 445 | 2 | 2 | 145 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 1 | 494 | 494 | 0 | 372 | 3 | 0 | 119 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 1 | 493 | 487 | 6 | 266 | 51 | 13 | 154 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 1 | 696 | 691 | 5 | 448 | 13 | 3 | 224 | 0 | | 0 | | 0 | | 0 | |
| | 2004 | 2003 | 4 | 797 | 797 | 0 | 491 | 1 | 2 | 303 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 4 | 796 | 796 | 0 | 326 | 4 | 4 | 462 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 4 | 703 | 701 | 0 | 289 | 0 | 1 | 413 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 6 | 602 | 601 | 0 | 392 | 2 | 36 | 172 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 4 | 498 | 498 | 0 | 290 | 2 | 13 | 194 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 3 | 499 | 496 | 74 | 176 | 35 | 60 | 151 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 2 | 692 | 691 | 2 | 315 | 3 | 7 | 364 | 0 | | 0 | | 0 | | 0 | |
| | 2005 | 2003 | 8 | 785 | 785 | 4 | 409 | 6 | 12 | 327 | 0 | | 27 | 3.44 | 0 | | 0 | |
| | | 2004 | 7 | 789 | 787 | 17 | 455 | 144 | 47 | 52 | 0 | | 72 | 9.15 | 0 | | 0 | |
| | | 2005 | 7 | 707 | 706 | 0 | 463 | 9 | 2 | 222 | 0 | | 10 | 1.42 | 0 | | 0 | |
| | | 2006 | 7 | 597 | 596 | 2 | 270 | 14 | 55 | 227 | 0 | | 28 | 4.7 | 0 | | 0 | |
| | | 2007 | 5 | 497 | 497 | 4 | 280 | 10 | 13 | 175 | 0 | | 15 | 3.02 | 0 | | 0 | |
| | | 2008 | 5 | 496 | 493 | 92 | 142 | 14 | 59 | 150 | 0 | | 36 | 7.3 | 0 | | 0 | |
| | | 2009 | 5 | 688 | 683 | 10 | 360 | 16 | 30 | 220 | 0 | | 48 | 7.03 | 0 | | 0 | |
| | 2006 | 2003 | 7 | 802 | 802 | 2 | 499 | 232 | 16 | 47 | 6 | 0.75 | 0 | | 0 | | 0 | |
| | | 2004 | 8 | 796 | 788 | 213 | 395 | 152 | 23 | 5 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 8 | 702 | 689 | 8 | 383 | 254 | 19 | 26 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 8 | 604 | 596 | 1 | 407 | 17 | 7 | 184 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 6 | 502 | 498 | 12 | 246 | 51 | 52 | 138 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2008 | 6 | 495 | 489 | 2 | 290 | 11 | 9 | 177 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 6 | 693 | 674 | 25 | 271 | 168 | 122 | 69 | 17 | 2.52 | 2 | 0.3 | 0 | | 0 | |
| | 2007 | 2003 | 1 | 795 | 795 | 6 | 430 | 9 | 7 | 322 | 0 | | 7 | 0.88 | 0 | | 14 | 1.76 |
| | | 2004 | 3 | 793 | 789 | 4 | 383 | 5 | 3 | 387 | 0 | | 5 | 0.63 | 0 | | 2 | 0.25 |
| | | 2005 | 1 | 689 | 686 | 60 | 464 | 21 | 63 | 6 | 0 | | 18 | 2.62 | 0 | | 54 | 7.87 |
| | | 2006 | 1 | 601 | 600 | 87 | 396 | 40 | 29 | 14 | 0 | | 3 | 0.5 | 0 | | 31 | 5.17 |
| | | 2007 | 9 | 494 | 494 | 135 | 246 | 24 | 26 | 60 | 0 | | 1 | 0.2 | 0 | | 13 | 2.63 |
| | | 2008 | 11 | 492 | 490 | 114 | 254 | 24 | 18 | 67 | 0 | | 8 | 1.63 | 0 | | 5 | 1.02 |
| | | 2009 | 9 | 693 | 689 | 139 | 338 | 21 | 28 | 139 | 0 | | 3 | 0.44 | 0 | | 21 | 3.05 |
| | 2008 | 2003 | 2 | 781 | 781 | 15 | 433 | 14 | 27 | 289 | 0 | | 0 | | 0 | | 3 | 0.38 |
| | | 2004 | 1 | 794 | 791 | 6 | 437 | 2 | 12 | 334 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 2 | 690 | 688 | 28 | 391 | 37 | 106 | 65 | 0 | | 9 | 1.31 | 0 | | 52 | 7.58 |
| | | 2006 | 2 | 600 | 599 | 27 | 443 | 10 | 61 | 45 | 0 | | 2 | 0.33 | 0 | | 11 | 1.84 |
| | | 2007 | 10 | 500 | 500 | 0 | 396 | 0 | 1 | 102 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2008 | 10 | 504 | 500 | 28 | 204 | 6 | 64 | 186 | 0 | | 11 | 2.2 | 0 | | 1 | 0.2 |
| | | 2009 | 8 | 699 | 672 | 2 | 300 | 0 | 13 | 354 | 0 | | 2 | 0.3 | 0 | | 1 | 0.15 |
| | 2009 | 2003 | 10 | 806 | 806 | 0 | 652 | 0 | 4 | 150 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 11 | 795 | 789 | 1 | 314 | 3 | 1 | 470 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 11 | 701 | 701 | 2 | 588 | 3 | 8 | 100 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | | 2006 | 11 | 602 | 601 | 0 | 428 | 3 | 3 | 168 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 11 | 499 | 498 | 4 | 375 | 10 | 6 | 103 | 0 | | 0 | | 0 | | 0 | |

| Area (3C/D, 5A) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2009 | | 2008 | 9 | 498 | 490 | 57 | 258 | 21 | 9 | 145 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 7 | 696 | 695 | 13 | 462 | 5 | 10 | 205 | 0 | | 0 | | 0 | | 0 | |
| 2010 | | 2003 | 11 | 792 | 792 | 6 | 374 | 1 | 13 | 398 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 10 | 796 | 791 | 0 | 447 | 20 | 20 | 304 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 10 | 703 | 700 | 14 | 463 | 18 | 76 | 129 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 10 | 598 | 593 | 1 | 373 | 9 | 10 | 200 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 8 | 498 | 498 | 2 | 365 | 4 | 24 | 103 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 8 | 498 | 495 | 184 | 155 | 14 | 77 | 85 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 22 | 702 | 696 | 24 | 355 | 6 | 26 | 285 | 0 | | 0 | | 0 | | 0 | |
| 2011 | | 2003 | 12 | 800 | 800 | 128 | 376 | 5 | 26 | 252 | 0 | | 11 | 1.38 | 0 | | 2 | 0.25 |
| | | 2004 | 9 | 794 | 792 | 23 | 506 | 212 | 9 | 38 | 2 | 0.25 | 2 | 0.25 | 0 | | 0 | |
| | | 2005 | 9 | 703 | 699 | 0 | 489 | 35 | 1 | 175 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 9 | 600 | 600 | 0 | 356 | 6 | 0 | 239 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 7 | 502 | 501 | 2 | 270 | 22 | 10 | 198 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 7 | 500 | 493 | 1 | 281 | 9 | 13 | 189 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 25 | 703 | 696 | 40 | 338 | 60 | 34 | 223 | 1 | 0.14 | 0 | | 0 | | 0 | |
| 2012 | | 2003 | 9 | 805 | 805 | 353 | 423 | 1 | 14 | 11 | 0 | | 1 | 0.12 | 0 | | 2 | 0.25 |
| | | 2004 | 12 | 797 | 792 | 6 | 248 | 3 | 15 | 515 | 0 | | 1 | 0.13 | 0 | | 4 | 0.51 |
| | | 2005 | 12 | 702 | 700 | 93 | 449 | 33 | 57 | 20 | 0 | | 13 | 1.86 | 0 | | 35 | 5 |
| | | 2006 | 12 | 600 | 600 | 170 | 351 | 10 | 42 | 7 | 0 | | 2 | 0.33 | 0 | | 18 | 3 |
| | | 2007 | 12 | 490 | 488 | 232 | 195 | 10 | 36 | 10 | 0 | | 3 | 0.61 | 0 | | 4 | 0.82 |
| | | 2008 | 12 | 494 | 341 | 151 | 138 | 16 | 29 | 1 | 0 | | 3 | 0.88 | 0 | | 6 | 1.76 |
| | | 2009 | 23 | 700 | 698 | 124 | 481 | 9 | 44 | 47 | 0 | | 2 | 0.29 | 0 | | 11 | 1.58 |
| 2013 | | 2003 | 14 | 803 | 803 | 0 | 490 | 0 | 3 | 310 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 13 | 794 | 792 | 1 | 271 | 3 | 5 | 499 | 0 | | 2 | 0.26 | 0 | | 1 | 0.13 |
| | | 2005 | 13 | 705 | 703 | 62 | 480 | 11 | 75 | 78 | 0 | | 12 | 1.71 | 0 | | 6 | 0.85 |
| | | 2006 | 13 | 601 | 601 | 87 | 361 | 16 | 44 | 65 | 0 | | 11 | 1.83 | 0 | | 18 | 3 |
| | | 2007 | 13 | 499 | 499 | 102 | 220 | 14 | 39 | 119 | 0 | | 3 | 0.6 | 0 | | 3 | 0.6 |
| | | 2008 | 13 | 496 | 491 | 189 | 232 | 8 | 24 | 28 | 0 | | 6 | 1.22 | 0 | | 4 | 0.81 |
| | | 2009 | 21 | 705 | 699 | 157 | 296 | 12 | 31 | 187 | 0 | | 10 | 1.43 | 0 | | 7 | 1 |
| 2014 | | 2003 | 13 | 803 | 803 | 0 | 408 | 2 | 1 | 392 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 14 | 796 | 795 | 30 | 602 | 90 | 3 | 70 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 14 | 703 | 701 | 4 | 460 | 2 | 2 | 233 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 14 | 603 | 602 | 0 | 385 | 3 | 0 | 214 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 14 | 502 | 500 | 0 | 273 | 0 | 0 | 227 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 14 | 495 | 492 | 43 | 153 | 25 | 45 | 225 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 24 | 702 | 696 | 13 | 378 | 10 | 9 | 286 | 0 | | 0 | | 0 | | 0 | |
| 2015 | | 2003 | 16 | 798 | 798 | 0 | 624 | 88 | 30 | 57 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 15 | 787 | 785 | 53 | 578 | 143 | 5 | 0 | 5 | 0.64 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 15 | 700 | 698 | 14 | 426 | 185 | 9 | 43 | 23 | 3.3 | 0 | | 0 | | 0 | |
| | | 2006 | 19 | 597 | 597 | 3 | 444 | 53 | 3 | 89 | 5 | 0.84 | 0 | | 0 | | 0 | |
| | | 2007 | 21 | 499 | 498 | 61 | 289 | 62 | 19 | 66 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2008 | 22 | 497 | 493 | 12 | 263 | 29 | 15 | 174 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 26 | 693 | 690 | 105 | 366 | 98 | 53 | 66 | 1 | 0.14 | 1 | 0.14 | 0 | | 0 | |
| 2016 | | 2003 | 15 | 804 | 804 | 6 | 541 | 34 | 11 | 212 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 18 | 794 | 792 | 31 | 550 | 30 | 18 | 163 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 17 | 702 | 702 | 12 | 382 | 24 | 21 | 260 | 0 | | 0 | | 0 | | 4 | 0.57 |
| | | 2006 | 15 | 600 | 597 | 58 | 272 | 43 | 23 | 196 | 0 | | 1 | 0.17 | 0 | | 5 | 0.84 |
| | | 2007 | 15 | 500 | 498 | 16 | 243 | 20 | 8 | 209 | 0 | | 0 | | 0 | | 2 | 0.4 |
| | | 2008 | 15 | 493 | 488 | 187 | 210 | 25 | 23 | 43 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 20 | 706 | 703 | 252 | 255 | 30 | 67 | 99 | 0 | | 0 | | 0 | | 0 | |
| 2017 | | 2003 | 17 | 806 | 806 | 2 | 389 | 6 | 10 | 399 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 17 | 789 | 789 | 91 | 515 | 146 | 1 | 36 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 16 | 701 | 700 | 11 | 437 | 32 | 3 | 218 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 21 | 599 | 598 | 0 | 445 | 13 | 7 | 134 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 20 | 499 | 497 | 0 | 417 | 5 | 4 | 71 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 20 | 498 | 496 | 6 | 319 | 28 | 5 | 138 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 19 | 699 | 696 | 11 | 412 | 4 | 13 | 256 | 0 | | 0 | | 0 | | 0 | |
| 2018 | | 2003 | 19 | 798 | 798 | 9 | 604 | 128 | 17 | 32 | 2 | 0.25 | 0 | | 4 | 0.5 | 0 | |
| | | 2004 | 18 | 790 | 785 | 78 | 536 | 146 | 14 | 0 | 6 | 0.76 | 0 | | 7 | 0.89 | 0 | |
| | | 2005 | 18 | 703 | 700 | 118 | 442 | 109 | 23 | 4 | 3 | 0.43 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 20 | 601 | 601 | 8 | 449 | 50 | 4 | 89 | 1 | 0.17 | 0 | | 0 | | 0 | |
| | | 2007 | 19 | 491 | 490 | 5 | 329 | 12 | 9 | 134 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2008 | 21 | 495 | 491 | 11 | 313 | 8 | 17 | 141 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 18 | 699 | 682 | 47 | 375 | 120 | 86 | 45 | 10 | 1.47 | 0 | | 0 | | 0 | |
| 2019 | | 2003 | 21 | 801 | 801 | 6 | 482 | 16 | 14 | 283 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 26 | 795 | 793 | 25 | 606 | 29 | 3 | 130 | 0 | | 0 | | 0 | | 0 | |

| Area | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (3C/D, 5A) | | | | | | | | | | | | | | | | | | |
| | 2019 | 2005 | 22 | 703 | 698 | 8 | 378 | 27 | 19 | 266 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 23 | 601 | 601 | 1 | 386 | 11 | 4 | 199 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 23 | 500 | 499 | 10 | 292 | 8 | 6 | 183 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 16 | 496 | 493 | 307 | 127 | 15 | 21 | 23 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 10 | 695 | 692 | 282 | 183 | 20 | 14 | 193 | 0 | | 0 | | 0 | | 0 | |
| | 2020 | 2003 | 18 | 805 | 805 | 3 | 402 | 4 | 15 | 381 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 25 | 787 | 786 | 91 | 545 | 74 | 4 | 72 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 19 | 705 | 705 | 1 | 420 | 2 | 1 | 282 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 24 | 603 | 602 | 0 | 367 | 17 | 6 | 204 | 0 | | 8 | 1.33 | 0 | | 0 | |
| | | 2007 | 24 | 501 | 501 | 0 | 292 | 3 | 0 | 206 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 19 | 498 | 494 | 40 | 145 | 23 | 34 | 243 | 0 | | 9 | 1.82 | 0 | | 0 | |
| | | 2009 | 13 | 692 | 683 | 67 | 306 | 41 | 39 | 227 | 0 | | 3 | 0.44 | 0 | | 0 | |
| | 2021 | 2003 | 20 | 799 | 799 | 2 | 551 | 64 | 12 | 170 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 24 | 793 | 792 | 473 | 256 | 27 | 36 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 20 | 700 | 696 | 81 | 398 | 137 | 50 | 35 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 16 | 598 | 598 | 1 | 458 | 30 | 6 | 103 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 18 | 500 | 500 | 7 | 327 | 12 | 9 | 145 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 23 | 494 | 494 | 0 | 327 | 0 | 0 | 167 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 14 | 701 | 699 | 70 | 527 | 26 | 20 | 56 | 0 | | 0 | | 0 | | 0 | |
| | 2023 | 2003 | 22 | 797 | 797 | 92 | 400 | 16 | 1 | 288 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 27 | 802 | 799 | 15 | 479 | 5 | 4 | 296 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 21 | 701 | 701 | 163 | 298 | 112 | 23 | 107 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 22 | 601 | 600 | 178 | 240 | 84 | 20 | 78 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 22 | 499 | 498 | 249 | 130 | 18 | 25 | 76 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 17 | 498 | 496 | 398 | 52 | 8 | 29 | 8 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 11 | 696 | 688 | 427 | 162 | 32 | 37 | 30 | 0 | | 0 | | 0 | | 0 | |
| | 2024 | 2003 | 23 | 802 | 801 | 28 | 431 | 19 | 14 | 296 | 0 | | 14 | 1.75 | 0 | | 0 | |
| | | 2004 | 28 | 802 | 789 | 45 | 447 | 31 | 37 | 193 | 0 | | 32 | 4.06 | 0 | | 4 | 0.51 |
| | | 2005 | 23 | 701 | 329 | 43 | 183 | 21 | 27 | 35 | 0 | | 18 | 4.86 | 0 | | 5 | 1.52 |
| | | 2006 | 25 | 598 | 593 | 75 | 280 | 68 | 32 | 96 | 0 | | 36 | 6.07 | 0 | | 8 | 1.35 |
| | | 2007 | 25 | 501 | 484 | 40 | 257 | 28 | 12 | 114 | 0 | | 30 | 6.2 | 0 | | 3 | 0.62 |
| | | 2008 | 18 | 493 | 488 | 234 | 153 | 33 | 31 | 2 | 0 | | 34 | 6.97 | 0 | | 3 | 0.61 |
| | | 2009 | 12 | 681 | 669 | 204 | 266 | 46 | 54 | 63 | 0 | | 31 | 4.63 | 0 | | 5 | 0.75 |
| | 2025 | 2003 | 25 | 800 | 800 | 3 | 447 | 17 | 9 | 324 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 23 | 804 | 804 | 40 | 554 | 165 | 21 | 24 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 26 | 702 | 701 | 0 | 462 | 34 | 15 | 196 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 17 | 603 | 603 | 0 | 426 | 23 | 2 | 152 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 17 | 498 | 497 | 0 | 341 | 5 | 11 | 140 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 25 | 499 | 499 | 1 | 297 | 1 | 1 | 199 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 15 | 705 | 699 | 242 | 213 | 16 | 24 | 204 | 0 | | 0 | | 0 | | 0 | |
| | 2026 | 2003 | 27 | 807 | 807 | 63 | 449 | 125 | 12 | 157 | 0 | | 1 | 0.12 | 0 | | 0 | |
| | | 2004 | 22 | 797 | 794 | 24 | 455 | 292 | 21 | 0 | 2 | 0.25 | 0 | | 0 | | 0 | |
| | | 2005 | 27 | 703 | 702 | 1 | 395 | 232 | 23 | 50 | 2 | 0.28 | 3 | 0.43 | 0 | | 0 | |
| | | 2006 | 18 | 601 | 600 | 2 | 404 | 36 | 11 | 147 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 16 | 495 | 492 | 1 | 354 | 13 | 9 | 113 | 4 | 0.81 | 0 | | 0 | | 0 | |
| | | 2008 | 24 | 502 | 493 | 0 | 263 | 15 | 14 | 199 | 2 | 0.41 | 0 | | 0 | | 0 | |
| | | 2009 | 27 | 695 | 688 | 31 | 332 | 137 | 94 | 85 | 6 | 0.87 | 3 | 0.44 | 0 | | 0 | |
| | 2027 | 2003 | 24 | 804 | 804 | 36 | 340 | 10 | 2 | 412 | 0 | | 0 | | 0 | | 4 | 0.5 |
| | | 2004 | 30 | 794 | 789 | 14 | 434 | 12 | 5 | 323 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 24 | 704 | 704 | 51 | 442 | 75 | 30 | 106 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 26 | 597 | 596 | 125 | 314 | 67 | 17 | 74 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 28 | 495 | 495 | 92 | 240 | 74 | 13 | 76 | 0 | | 0 | | 0 | | 1 | 0.2 |
| | | 2008 | 26 | 493 | 491 | 393 | 73 | 10 | 8 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 17 | 690 | 683 | 228 | 358 | 39 | 47 | 10 | 0 | | 0 | | 0 | | 1 | 0.15 |
| | 2028 | 2003 | 26 | 794 | 794 | 16 | 471 | 12 | 3 | 292 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 29 | 796 | 794 | 73 | 529 | 21 | 17 | 153 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 25 | 706 | 703 | 19 | 437 | 58 | 41 | 150 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 27 | 602 | 601 | 7 | 285 | 64 | 34 | 211 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 27 | 501 | 498 | 17 | 228 | 31 | 44 | 178 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 27 | 497 | 486 | 184 | 159 | 49 | 43 | 51 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 16 | 694 | 685 | 92 | 276 | 68 | 45 | 204 | 0 | | 0 | | 0 | | 0 | |
| | 2029 | 2003 | 28 | 798 | 798 | 3 | 442 | 21 | 16 | 316 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 19 | 799 | 798 | 256 | 352 | 186 | 4 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 28 | 702 | 702 | 3 | 471 | 41 | 2 | 192 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 28 | 601 | 600 | 0 | 406 | 11 | 8 | 175 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 28 | 501 | 498 | 8 | 308 | 19 | 26 | 137 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 28 | 500 | 498 | 5 | 235 | 8 | 8 | 242 | 0 | | 0 | | 0 | | 0 | |

| Area (3C/D, 5A) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2029 | 2009 | 28 | 710 | 706 | 13 | 367 | 40 | 75 | 212 | 0 | | 0 | | 0 | | 0 | |
| | 2030 | 2003 | 29 | 811 | 811 | 3 | 420 | 39 | 32 | 317 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 20 | 793 | 793 | 58 | 553 | 153 | 29 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 29 | 706 | 706 | 1 | 445 | 31 | 11 | 219 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 29 | 599 | 599 | 2 | 424 | 11 | 7 | 155 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 29 | 496 | 496 | 36 | 248 | 52 | 47 | 113 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 29 | 496 | 494 | 127 | 189 | 34 | 36 | 108 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 29 | 700 | 697 | 102 | 301 | 63 | 35 | 196 | 0 | | 0 | | 0 | | 0 | |
| | 2031 | 2003 | 30 | 791 | 791 | 13 | 435 | 101 | 16 | 214 | 9 | 1.14 | 0 | | 3 | 0.38 | 0 | |
| | | 2004 | 21 | 786 | 783 | 80 | 449 | 190 | 27 | 6 | 21 | 2.68 | 8 | 1.02 | 2 | 0.26 | 0 | |
| | | 2005 | 30 | 700 | 699 | 16 | 363 | 206 | 55 | 46 | 16 | 2.29 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 30 | 599 | 597 | 0 | 454 | 26 | 6 | 103 | 6 | 1.01 | 2 | 0.34 | 0 | | 0 | |
| | | 2007 | 30 | 497 | 496 | 6 | 291 | 31 | 14 | 141 | 10 | 2.02 | 2 | 0.4 | 1 | 0.2 | 0 | |
| | | 2008 | 30 | 497 | 490 | 5 | 231 | 27 | 7 | 179 | 15 | 3.06 | 0 | | 0 | | 0 | |
| | | 2009 | 30 | 688 | 678 | 12 | 320 | 109 | 155 | 72 | 3 | 0.44 | 8 | 1.18 | 0 | | 0 | |
| | 2032 | 2003 | 31 | 804 | 804 | 22 | 321 | 5 | 29 | 426 | 0 | | 0 | | 0 | | 1 | 0.12 |
| | | 2004 | 31 | 795 | 794 | 237 | 435 | 3 | 73 | 44 | 0 | | 1 | 0.13 | 0 | | 1 | 0.13 |
| | | 2005 | 31 | 701 | 697 | 93 | 333 | 11 | 157 | 102 | 0 | | 0 | | 0 | | 1 | 0.14 |
| | | 2006 | 31 | 601 | 601 | 7 | 328 | 15 | 143 | 108 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 31 | 499 | 498 | 43 | 308 | 4 | 100 | 43 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 31 | 495 | 493 | 187 | 204 | 7 | 75 | 20 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 31 | 697 | 696 | 21 | 253 | 12 | 90 | 320 | 0 | | 0 | | 0 | | 0 | |
| | 2033 | 2003 | 32 | 801 | 801 | 5 | 458 | 39 | 9 | 262 | 23 | 2.87 | 4 | 0.5 | 0 | | 0 | |
| | | 2004 | 32 | 799 | 794 | 33 | 563 | 175 | 6 | 1 | 14 | 1.76 | 0 | | 2 | 0.25 | 0 | |
| | | 2005 | 32 | 704 | 703 | 2 | 356 | 65 | 11 | 257 | 12 | 1.71 | 0 | | 0 | | 0 | |
| | | 2006 | 32 | 599 | 599 | 4 | 408 | 10 | 2 | 165 | 0 | | 10 | 1.67 | 0 | | 0 | |
| | | 2007 | 32 | 502 | 500 | 2 | 210 | 20 | 14 | 254 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 32 | 495 | 490 | 1 | 208 | 14 | 12 | 251 | 0 | | 4 | 0.82 | 0 | | 0 | |
| | | 2009 | 32 | 691 | 683 | 29 | 345 | 33 | 96 | 148 | 10 | 1.46 | 22 | 3.22 | 0 | | 0 | |
| | 2034 | 2003 | 33 | 788 | 788 | 16 | 345 | 21 | 68 | 335 | 0 | | 1 | 0.13 | 0 | | 2 | 0.25 |
| | | 2004 | 33 | 798 | 796 | 121 | 575 | 19 | 66 | 10 | 0 | | 3 | 0.38 | 0 | | 2 | 0.25 |
| | | 2005 | 33 | 705 | 704 | 47 | 460 | 15 | 114 | 51 | 0 | | 11 | 1.56 | 0 | | 6 | 0.85 |
| | | 2006 | 33 | 602 | 602 | 25 | 368 | 31 | 94 | 81 | 0 | | 3 | 0.5 | 0 | | 0 | |
| | | 2007 | 33 | 497 | 496 | 9 | 255 | 20 | 39 | 174 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 33 | 498 | 496 | 86 | 250 | 26 | 93 | 34 | 0 | | 4 | 0.81 | 0 | | 3 | 0.6 |
| | | 2009 | 33 | 701 | 675 | 10 | 390 | 30 | 92 | 152 | 0 | | 1 | 0.15 | 0 | | 0 | |
| | 2035 | 2003 | 34 | 802 | 802 | 11 | 524 | 52 | 11 | 183 | 3 | 0.37 | 18 | 2.24 | 0 | | 0 | |
| | | 2004 | 34 | 792 | 784 | 146 | 361 | 59 | 73 | 2 | 92 | 11.7 | 51 | 6.51 | 0 | | 0 | |
| | | 2005 | 34 | 699 | 699 | 9 | 368 | 53 | 41 | 211 | 9 | 1.29 | 10 | 1.43 | 0 | | 0 | |
| | | 2006 | 34 | 601 | 600 | 3 | 415 | 9 | 9 | 153 | 2 | 0.33 | 9 | 1.5 | 0 | | 0 | |
| | | 2007 | 34 | 499 | 498 | 50 | 216 | 20 | 39 | 140 | 11 | 2.21 | 20 | 4.02 | 0 | | 0 | |
| | | 2008 | 34 | 488 | 487 | 1 | 261 | 13 | 12 | 194 | 5 | 1.03 | 1 | 0.21 | 0 | | 0 | |
| | | 2009 | 34 | 695 | 693 | 108 | 284 | 54 | 64 | 82 | 59 | 8.51 | 42 | 6.06 | 0 | | 0 | |
| | 2037 | 2003 | 35 | 800 | 800 | 4 | 484 | 88 | 20 | 186 | 8 | 1 | 10 | 1.25 | 0 | | 0 | |
| | | 2004 | 35 | 793 | 789 | 83 | 444 | 208 | 18 | 2 | 11 | 1.39 | 23 | 2.92 | 0 | | 0 | |
| | | 2005 | 35 | 702 | 699 | 6 | 328 | 141 | 38 | 131 | 29 | 4.15 | 29 | 4.15 | 0 | | 0 | |
| | | 2006 | 35 | 602 | 597 | 1 | 404 | 21 | 13 | 132 | 21 | 3.52 | 6 | 1.01 | 0 | | 0 | |
| | | 2007 | 35 | 497 | 497 | 3 | 276 | 21 | 24 | 130 | 30 | 6.04 | 13 | 2.62 | 0 | | 0 | |
| | | 2008 | 35 | 488 | 486 | 0 | 301 | 4 | 5 | 170 | 5 | 1.03 | 2 | 0.41 | 0 | | 0 | |
| | | 2009 | 35 | 698 | 691 | 37 | 307 | 102 | 70 | 105 | 54 | 7.81 | 18 | 2.6 | 0 | | 0 | |
| | 2038 | 2003 | 36 | 800 | 800 | 230 | 472 | 10 | 43 | 41 | 0 | | 3 | 0.38 | 0 | | 1 | 0.12 |
| | | 2004 | 82 | 794 | 791 | 22 | 635 | 28 | 104 | 2 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 37 | 704 | 703 | 49 | 461 | 64 | 84 | 14 | 0 | | 30 | 4.27 | 0 | | 2 | 0.28 |
| | | 2006 | 36 | 596 | 596 | 41 | 358 | 35 | 76 | 71 | 0 | | 12 | 2.01 | 0 | | 4 | 0.67 |
| | | 2007 | 36 | 501 | 501 | 76 | 244 | 58 | 35 | 69 | 0 | | 12 | 2.4 | 0 | | 7 | 1.4 |
| | | 2008 | 37 | 495 | 494 | 216 | 165 | 37 | 45 | 8 | 0 | | 17 | 3.44 | 0 | | 6 | 1.21 |
| | | 2009 | 53 | 697 | 687 | 125 | 365 | 61 | 64 | 55 | 0 | | 12 | 1.75 | 0 | | 5 | 0.73 |
| | 2039 | 2003 | 37 | 792 | 792 | 6 | 536 | 27 | 7 | 201 | 9 | 1.14 | 6 | 0.76 | 0 | | 0 | |
| | | 2004 | 36 | 796 | 793 | 35 | 609 | 109 | 21 | 5 | 7 | 0.88 | 7 | 0.88 | 0 | | 0 | |
| | | 2005 | 38 | 703 | 703 | 9 | 434 | 46 | 14 | 173 | 20 | 2.84 | 10 | 1.42 | 0 | | 0 | |
| | | 2006 | 37 | 603 | 602 | 7 | 425 | 4 | 2 | 164 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 69 | 500 | 499 | 0 | 325 | 5 | 2 | 166 | 1 | 0.2 | 1 | 0.2 | 0 | | 0 | |
| | | 2008 | 36 | 498 | 493 | 10 | 266 | 6 | 10 | 201 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 54 | 697 | 695 | 17 | 363 | 23 | 20 | 258 | 6 | 0.86 | 8 | 1.15 | 0 | | 0 | |
| | 2040 | 2003 | 38 | 793 | 793 | 51 | 630 | 40 | 66 | 3 | 0 | | 1 | 0.13 | 0 | | 2 | 0.25 |
| | | 2004 | 83 | 795 | 790 | 67 | 554 | 73 | 91 | 5 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 36 | 702 | 702 | 35 | 486 | 61 | 102 | 9 | 0 | | 6 | 0.85 | 0 | | 3 | 0.43 |

| Area (3C/D, 5A) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2040 | 2008 | 40 | 599 | 597 | 100 | 360 | 40 | 91 | 2 | 0 | | 1 | 0.17 | 0 | | 3 | 0.5 |
| | | 2007 | 68 | 496 | 495 | 79 | 302 | 54 | 47 | 6 | 0 | | 1 | 0.2 | 0 | | 7 | 1.41 |
| | | 2006 | 38 | 494 | 489 | 91 | 316 | 40 | 36 | 3 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 52 | 700 | 698 | 50 | 493 | 94 | 46 | 9 | 0 | | 3 | 0.43 | 0 | | 3 | 0.43 |
| | 2041 | 2003 | 53 | 800 | 800 | 24 | 616 | 87 | 69 | 3 | 0 | | 0 | | 1 | 0.12 | 0 | |
| | | 2004 | 50 | 797 | 794 | 117 | 554 | 91 | 29 | 3 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 78 | 701 | 700 | 59 | 516 | 85 | 36 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 43 | 600 | 599 | 0 | 419 | 4 | 1 | 175 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 37 | 500 | 500 | 61 | 332 | 43 | 53 | 11 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 66 | 494 | 488 | 148 | 237 | 30 | 51 | 23 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 47 | 699 | 696 | 174 | 430 | 57 | 26 | 9 | 0 | | 0 | | 0 | | 0 | |
| | 2042 | 2003 | 52 | 788 | 788 | 215 | 506 | 27 | 30 | 1 | 0 | | 7 | 0.89 | 0 | | 2 | 0.25 |
| | | 2004 | 49 | 793 | 784 | 163 | 500 | 55 | 42 | 9 | 0 | | 14 | 1.79 | 0 | | 1 | 0.13 |
| | | 2005 | 79 | 698 | 696 | 40 | 530 | 30 | 90 | 1 | 0 | | 5 | 0.72 | 0 | | 0 | |
| | | 2006 | 42 | 603 | 603 | 36 | 458 | 57 | 27 | 21 | 0 | | 4 | 0.66 | 0 | | 0 | |
| | | 2007 | 38 | 499 | 499 | 72 | 368 | 18 | 36 | 4 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2008 | 65 | 499 | 495 | 82 | 340 | 15 | 40 | 11 | 0 | | 3 | 0.61 | 0 | | 4 | 0.81 |
| | | 2009 | 46 | 698 | 698 | 108 | 365 | 124 | 56 | 27 | 0 | | 14 | 2.01 | 0 | | 6 | 0.86 |
| | 2043 | 2003 | 54 | 798 | 798 | 16 | 539 | 36 | 27 | 180 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 51 | 801 | 799 | 85 | 558 | 61 | 31 | 64 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 81 | 702 | 701 | 29 | 483 | 87 | 29 | 73 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 45 | 601 | 600 | 6 | 390 | 52 | 17 | 140 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 40 | 501 | 500 | 36 | 292 | 43 | 100 | 35 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 63 | 496 | 490 | 33 | 276 | 34 | 65 | 82 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 48 | 694 | 689 | 4 | 438 | 81 | 108 | 59 | 0 | | 0 | | 0 | | 0 | |
| | 2044 | 2003 | 41 | 797 | 797 | 164 | 481 | 24 | 57 | 16 | 0 | | 45 | 5.65 | 0 | | 10 | 1.25 |
| | | 2004 | 80 | 792 | 789 | 81 | 514 | 47 | 70 | 0 | 0 | | 72 | 9.13 | 0 | | 5 | 0.63 |
| | | 2005 | 40 | 705 | 699 | 72 | 492 | 24 | 81 | 1 | 0 | | 29 | 4.15 | 0 | | 0 | |
| | | 2006 | 38 | 598 | 594 | 105 | 354 | 35 | 89 | 4 | 0 | | 8 | 1.35 | 0 | | 0 | |
| | | 2007 | 70 | 501 | 498 | 33 | 346 | 14 | 80 | 11 | 0 | | 13 | 2.61 | 0 | | 1 | 0.2 |
| | | 2008 | 43 | 495 | 491 | 310 | 122 | 17 | 37 | 2 | 0 | | 2 | 0.41 | 0 | | 1 | 0.2 |
| | | 2009 | 56 | 689 | 680 | 358 | 208 | 33 | 43 | 7 | 0 | | 27 | 3.97 | 0 | | 4 | 0.59 |
| | 2045 | 2003 | 42 | 610 | 610 | 276 | 243 | 8 | 72 | 7 | 0 | | 4 | 0.66 | 0 | | 0 | |
| | | 2004 | 79 | 787 | 780 | 155 | 451 | 43 | 89 | 13 | 0 | | 29 | 3.72 | 0 | | 0 | |
| | | 2005 | 39 | 703 | 700 | 116 | 389 | 15 | 143 | 3 | 0 | | 34 | 4.86 | 0 | | 0 | |
| | | 2006 | 39 | 596 | 596 | 75 | 348 | 18 | 93 | 18 | 0 | | 44 | 7.38 | 0 | | 0 | |
| | | 2007 | 82 | 494 | 492 | 19 | 252 | 24 | 83 | 79 | 0 | | 35 | 7.11 | 0 | | 0 | |
| | | 2008 | 44 | 499 | 488 | 315 | 135 | 4 | 9 | 17 | 0 | | 8 | 1.64 | 0 | | 0 | |
| | | 2009 | 55 | 694 | 685 | 157 | 290 | 26 | 100 | 57 | 0 | | 55 | 8.03 | 0 | | 0 | |
| | 2046 | 2003 | 51 | 801 | 801 | 155 | 578 | 34 | 30 | 0 | 0 | | 2 | 0.25 | 0 | | 2 | 0.25 |
| | | 2004 | 84 | 791 | 789 | 43 | 670 | 14 | 62 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 76 | 702 | 700 | 31 | 550 | 7 | 99 | 1 | 0 | | 10 | 1.43 | 0 | | 2 | 0.29 |
| | | 2006 | 41 | 594 | 592 | 81 | 455 | 5 | 48 | 0 | 0 | | 3 | 0.51 | 0 | | 0 | |
| | | 2007 | 67 | 501 | 500 | 74 | 355 | 3 | 61 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 41 | 494 | 490 | 51 | 370 | 5 | 57 | 3 | 0 | | 4 | 0.82 | 0 | | 0 | |
| | | 2009 | 51 | 701 | 701 | 216 | 363 | 30 | 82 | 11 | 0 | | 0 | | 0 | | 0 | |
| | 2047 | 2003 | 39 | 794 | 794 | 213 | 487 | 2 | 73 | 3 | 0 | | 4 | 0.5 | 0 | | 12 | 1.51 |
| | | 2004 | 72 | 794 | 793 | 461 | 274 | 15 | 40 | 1 | 0 | | 1 | 0.13 | 0 | | 1 | 0.13 |
| | | 2005 | 75 | 702 | 702 | 118 | 512 | 5 | 62 | 3 | 0 | | 0 | | 0 | | 2 | 0.29 |
| | | 2006 | 64 | 597 | 597 | 112 | 436 | 5 | 36 | 7 | 0 | | 0 | | 0 | | 1 | 0.17 |
| | | 2007 | 64 | 496 | 495 | 325 | 125 | 1 | 43 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 39 | 496 | 494 | 333 | 125 | 1 | 34 | 0 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 36 | 696 | 692 | 441 | 183 | 2 | 60 | 5 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | 2048 | 2003 | 40 | 792 | 792 | 100 | 622 | 5 | 61 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 81 | 789 | 787 | 93 | 627 | 7 | 60 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 41 | 700 | 700 | 32 | 608 | 5 | 51 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 61 | 600 | 600 | 115 | 455 | 8 | 19 | 3 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 71 | 497 | 496 | 393 | 81 | 3 | 14 | 5 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 42 | 491 | 488 | 324 | 135 | 11 | 16 | 2 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 57 | 693 | 689 | 549 | 123 | 6 | 8 | 3 | 0 | | 0 | | 0 | | 0 | |
| | 2049 | 2003 | 43 | 801 | 801 | 213 | 506 | 24 | 51 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 77 | 788 | 785 | 72 | 565 | 106 | 36 | 6 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 42 | 703 | 702 | 24 | 544 | 99 | 27 | 8 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | | 2006 | 59 | 600 | 600 | 100 | 379 | 57 | 42 | 23 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 72 | 500 | 499 | 212 | 220 | 27 | 12 | 27 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2008 | 45 | 499 | 497 | 348 | 73 | 7 | 28 | 41 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 58 | 704 | 698 | 143 | 454 | 16 | 49 | 36 | 0 | | 0 | | 0 | | 0 | |

| Area | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (3C/D, 5A) | | | | | | | | | | | | | | | | | | |
| | 2050 | 2003 | 44 | 792 | 792 | 111 | 375 | 62 | 35 | 198 | 10 | 1.26 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 76 | 790 | 781 | 221 | 324 | 91 | 54 | 12 | 64 | 8.19 | 15 | 1.92 | 0 | | 0 | |
| | | 2005 | 43 | 703 | 699 | 48 | 341 | 86 | 68 | 89 | 48 | 6.87 | 21 | 3 | 0 | | 0 | |
| | | 2006 | 60 | 594 | 593 | 10 | 331 | 45 | 10 | 122 | 50 | 8.43 | 26 | 4.38 | 0 | | 0 | |
| | | 2007 | 83 | 496 | 494 | 2 | 296 | 19 | 8 | 145 | 16 | 3.24 | 12 | 2.43 | 0 | | 0 | |
| | | 2008 | 53 | 500 | 489 | 55 | 156 | 81 | 41 | 105 | 48 | 9.82 | 5 | 1.02 | 0 | | 0 | |
| | | 2009 | 59 | 690 | 684 | 7 | 288 | 22 | 17 | 326 | 20 | 2.92 | 4 | 0.58 | 0 | | 0 | |
| | 2051 | 2003 | 55 | 796 | 796 | 11 | 519 | 8 | 34 | 214 | 0 | | 9 | 1.13 | 1 | 0.13 | 0 | |
| | | 2004 | 54 | 793 | 787 | 172 | 471 | 36 | 62 | 41 | 0 | | 5 | 0.64 | 0 | | 0 | |
| | | 2005 | 80 | 704 | 702 | 23 | 455 | 60 | 66 | 70 | 0 | | 29 | 4.13 | 0 | | 0 | |
| | | 2006 | 46 | 598 | 597 | 14 | 345 | 11 | 10 | 204 | 0 | | 13 | 2.18 | 0 | | 0 | |
| | | 2007 | 39 | 491 | 483 | 219 | 202 | 4 | 26 | 13 | 0 | | 18 | 3.73 | 0 | | 1 | 0.21 |
| | | 2008 | 64 | 498 | 498 | 220 | 196 | 7 | 31 | 36 | 0 | | 9 | 1.81 | 0 | | 0 | |
| | | 2009 | 49 | 694 | 691 | 58 | 573 | 18 | 10 | 25 | 0 | | 5 | 0.72 | 0 | | 2 | 0.29 |
| | 2052 | 2003 | 56 | 800 | 800 | 395 | 296 | 55 | 40 | 13 | 1 | 0.12 | 0 | | 0 | | 0 | |
| | | 2004 | 53 | 795 | 793 | 209 | 515 | 32 | 20 | 14 | 3 | 0.38 | 0 | | 0 | | 0 | |
| | | 2005 | 77 | 701 | 699 | 195 | 446 | 23 | 23 | 2 | 10 | 1.43 | 0 | | 0 | | 0 | |
| | | 2006 | 47 | 598 | 598 | 5 | 452 | 8 | 2 | 130 | 1 | 0.17 | 0 | | 0 | | 0 | |
| | | 2007 | 66 | 501 | 501 | 184 | 241 | 16 | 9 | 45 | 6 | 1.2 | 0 | | 0 | | 0 | |
| | | 2008 | 40 | 492 | 483 | 22 | 280 | 72 | 43 | 65 | 1 | 0.21 | 0 | | 0 | | 0 | |
| | | 2009 | 50 | 693 | 681 | 14 | 478 | 64 | 45 | 79 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | 2053 | 2003 | 57 | 798 | 798 | 557 | 187 | 0 | 54 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 71 | 795 | 792 | 254 | 411 | 18 | 109 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 74 | 701 | 699 | 66 | 521 | 9 | 103 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 63 | 600 | 599 | 19 | 473 | 10 | 96 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 65 | 498 | 498 | 167 | 266 | 6 | 57 | 2 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 47 | 493 | 490 | 191 | 208 | 5 | 79 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 38 | 700 | 695 | 35 | 483 | 36 | 129 | 12 | 0 | | 0 | | 0 | | 0 | |
| | 2054 | 2003 | 63 | 801 | 801 | 138 | 570 | 8 | 81 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 70 | 794 | 793 | 336 | 325 | 78 | 52 | 2 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 73 | 704 | 704 | 101 | 500 | 17 | 79 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 62 | 599 | 599 | 42 | 454 | 29 | 70 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 74 | 498 | 498 | 33 | 327 | 15 | 117 | 6 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 46 | 504 | 501 | 149 | 250 | 10 | 80 | 13 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 37 | 695 | 690 | 23 | 478 | 24 | 141 | 24 | 0 | | 0 | | 0 | | 0 | |
| | 2055 | 2003 | 45 | 800 | 800 | 148 | 401 | 140 | 64 | 19 | 21 | 2.62 | 0 | | 7 | 0.88 | 0 | |
| | | 2004 | 78 | 795 | 789 | 188 | 457 | 85 | 38 | 4 | 12 | 1.52 | 0 | | 7 | 0.89 | 0 | |
| | | 2005 | 45 | 703 | 702 | 12 | 402 | 216 | 4 | 11 | 14 | 1.99 | 0 | | 5 | 0.71 | 0 | |
| | | 2006 | 58 | 597 | 595 | 16 | 397 | 146 | 22 | 12 | 2 | 0.34 | 0 | | 0 | | 0 | |
| | | 2007 | 73 | 500 | 498 | 15 | 348 | 70 | 17 | 43 | 4 | 0.8 | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 51 | 493 | 493 | 34 | 291 | 93 | 54 | 13 | 5 | 1.01 | 0 | | 3 | 0.61 | 0 | |
| | | 2009 | 60 | 697 | 685 | 19 | 377 | 172 | 65 | 38 | 12 | 1.75 | 0 | | 2 | 0.29 | 0 | |
| | 2056 | 2003 | 46 | 798 | 798 | 78 | 538 | 125 | 18 | 39 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 75 | 795 | 780 | 319 | 336 | 59 | 49 | 10 | 6 | 0.77 | 0 | | 1 | 0.13 | 0 | |
| | | 2005 | 44 | 702 | 701 | 6 | 420 | 134 | 54 | 86 | 3 | 0.43 | 0 | | 0 | | 0 | |
| | | 2006 | 57 | 601 | 600 | 49 | 391 | 107 | 8 | 43 | 2 | 0.33 | 0 | | 0 | | 0 | |
| | | 2007 | 84 | 502 | 500 | 1 | 338 | 31 | 6 | 124 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 52 | 500 | 491 | 61 | 221 | 88 | 89 | 31 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 61 | 463 | 447 | 4 | 269 | 55 | 30 | 90 | 0 | | 0 | | 0 | | 0 | |
| | 2058 | 2003 | 76 | 803 | 803 | 82 | 641 | 23 | 39 | 18 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 42 | 498 | 497 | 152 | 291 | 11 | 26 | 17 | 0 | | 0 | | 0 | | 0 | |
| 5B | | | | | | | | | | | | | | | | | | |
| | 2057 | 2003 | 74 | 803 | 803 | 152 | 488 | 32 | 73 | 53 | 0 | | 3 | 0.37 | 0 | | 2 | 0.25 |
| | | 2004 | 39 | 800 | 795 | 104 | 551 | 45 | 29 | 50 | 0 | | 16 | 2.01 | 0 | | 0 | |
| | | 2005 | 84 | 695 | 695 | 71 | 536 | 23 | 7 | 56 | 0 | | 2 | 0.29 | 0 | | 0 | |
| | | 2006 | 44 | 603 | 602 | 32 | 400 | 16 | 13 | 132 | 0 | | 5 | 0.83 | 0 | | 4 | 0.66 |
| | | 2007 | 41 | 501 | 500 | 58 | 356 | 15 | 25 | 41 | 0 | | 5 | 1 | 0 | | 0 | |
| | | 2008 | 62 | 498 | 495 | 18 | 378 | 10 | 25 | 59 | 0 | | 5 | 1.01 | 0 | | 0 | |
| | | 2009 | 45 | 689 | 681 | 13 | 477 | 40 | 44 | 107 | 0 | | 1 | 0.15 | 0 | | 0 | |
| | 2058 | 2004 | 37 | 798 | 796 | 122 | 584 | 37 | 44 | 9 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 83 | 701 | 700 | 48 | 594 | 13 | 36 | 10 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 48 | 601 | 601 | 80 | 479 | 15 | 23 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 61 | 501 | 499 | 252 | 174 | 16 | 41 | 16 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 43 | 699 | 695 | 244 | 374 | 31 | 31 | 15 | 0 | | 0 | | 0 | | 0 | |
| | 2059 | 2003 | 77 | 801 | 801 | 485 | 269 | 18 | 12 | 13 | 1 | 0.12 | 3 | 0.37 | 0 | | 0 | |
| | | 2004 | 52 | 799 | 796 | 115 | 533 | 78 | 17 | 25 | 28 | 3.52 | 0 | | 0 | | 0 | |
| | | 2005 | 70 | 701 | 700 | 99 | 471 | 69 | 11 | 47 | 5 | 0.71 | 0 | | 0 | | 0 | |

| Area (5B) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2059 | 2006 | 83 | 597 | 597 | 203 | 318 | 48 | 18 | 8 | 2 | 0.34 | 0 | | 0 | | 0 | |
| | | 2007 | 43 | 498 | 497 | 89 | 320 | 43 | 19 | 26 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 59 | 499 | 497 | 46 | 363 | 5 | 32 | 51 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 42 | 692 | 689 | 49 | 523 | 14 | 24 | 79 | 0 | | 0 | | 0 | | 0 | |
| | 2060 | 2003 | 58 | 794 | 794 | 60 | 493 | 114 | 55 | 70 | 1 | 0.13 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 55 | 798 | 790 | 136 | 486 | 95 | 35 | 10 | 28 | 3.54 | 0 | | 0 | | 0 | |
| | | 2005 | 71 | 700 | 698 | 61 | 475 | 95 | 27 | 13 | 28 | 4.01 | 0 | | 0 | | 0 | |
| | | 2006 | 84 | 597 | 595 | 111 | 386 | 69 | 12 | 6 | 11 | 1.85 | 0 | | 0 | | 0 | |
| | | 2007 | 62 | 500 | 498 | 2 | 391 | 31 | 24 | 47 | 3 | 0.6 | 0 | | 0 | | 0 | |
| | | 2008 | 48 | 488 | 481 | 33 | 271 | 56 | 49 | 70 | 1 | 0.21 | 1 | 0.21 | 0 | | 0 | |
| | | 2009 | 39 | 698 | 687 | 6 | 408 | 16 | 11 | 245 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | 2061 | 2003 | 62 | 801 | 801 | 66 | 597 | 90 | 27 | 2 | 18 | 2.25 | 0 | | 1 | 0.12 | 0 | |
| | | 2004 | 68 | 793 | 791 | 269 | 411 | 42 | 25 | 3 | 29 | 3.67 | 0 | | 12 | 1.52 | 0 | |
| | | 2005 | 72 | 703 | 702 | 78 | 448 | 115 | 28 | 1 | 33 | 4.7 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 52 | 605 | 604 | 63 | 432 | 71 | 12 | 10 | 16 | 2.65 | 0 | | 0 | | 0 | |
| | | 2007 | 63 | 504 | 497 | 5 | 354 | 104 | 22 | 3 | 11 | 2.21 | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 49 | 498 | 495 | 5 | 307 | 131 | 30 | 17 | 9 | 1.82 | 0 | | 0 | | 0 | |
| | | 2009 | 67 | 697 | 683 | 39 | 413 | 118 | 76 | 27 | 10 | 1.46 | 0 | | 0 | | 0 | |
| | 2062 | 2003 | 64 | 803 | 803 | 101 | 653 | 28 | 16 | 2 | 2 | 0.25 | 0 | | 1 | 0.12 | 0 | |
| | | 2004 | 69 | 794 | 789 | 144 | 495 | 42 | 56 | 2 | 29 | 3.68 | 0 | | 21 | 2.66 | 0 | |
| | | 2005 | 54 | 701 | 701 | 19 | 530 | 77 | 60 | 4 | 11 | 1.57 | 0 | | 0 | | 0 | |
| | | 2006 | 56 | 602 | 599 | 37 | 451 | 46 | 39 | 15 | 9 | 1.5 | 0 | | 2 | 0.33 | 0 | |
| | | 2007 | 76 | 501 | 499 | 1 | 348 | 80 | 27 | 39 | 3 | 0.6 | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 50 | 499 | 497 | 22 | 254 | 92 | 89 | 30 | 9 | 1.81 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 66 | 689 | 681 | 16 | 408 | 111 | 54 | 59 | 33 | 4.85 | 0 | | 0 | | 0 | |
| | 2063 | 2003 | 47 | 798 | 798 | 101 | 510 | 44 | 69 | 54 | 14 | 1.75 | 6 | 0.75 | 0 | | 0 | |
| | | 2004 | 74 | 794 | 790 | 224 | 386 | 75 | 84 | 9 | 11 | 1.39 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 53 | 704 | 704 | 18 | 521 | 67 | 33 | 60 | 3 | 0.43 | 2 | 0.28 | 0 | | 0 | |
| | | 2006 | 55 | 598 | 597 | 72 | 392 | 51 | 28 | 51 | 1 | 0.17 | 2 | 0.34 | 0 | | 0 | |
| | | 2007 | 77 | 499 | 497 | 2 | 349 | 44 | 16 | 85 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2008 | 67 | 499 | 493 | 55 | 227 | 68 | 7 | 130 | 5 | 1.01 | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 62 | 697 | 692 | 61 | 346 | 41 | 58 | 174 | 11 | 1.59 | 1 | 0.14 | 0 | | 0 | |
| | 2064 | 2003 | 48 | 795 | 795 | 57 | 571 | 80 | 23 | 57 | 7 | 0.88 | 0 | | 0 | | 0 | |
| | | 2004 | 73 | 797 | 794 | 172 | 435 | 125 | 48 | 1 | 12 | 1.51 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 48 | 703 | 702 | 20 | 466 | 130 | 13 | 66 | 8 | 1.14 | 0 | | 0 | | 0 | |
| | | 2006 | 65 | 600 | 600 | 24 | 399 | 101 | 7 | 61 | 8 | 1.33 | 0 | | 0 | | 0 | |
| | | 2007 | 81 | 501 | 500 | 4 | 331 | 69 | 4 | 85 | 7 | 1.4 | 0 | | 0 | | 0 | |
| | | 2008 | 70 | 500 | 496 | 5 | 307 | 80 | 10 | 93 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 126 | 702 | 695 | 5 | 269 | 7 | 13 | 392 | 8 | 1.15 | 1 | 0.14 | 0 | | 0 | |
| | 2065 | 2003 | 75 | 799 | 799 | 228 | 466 | 6 | 65 | 21 | 0 | | 10 | 1.25 | 0 | | 3 | 0.38 |
| | | 2004 | 38 | 798 | 795 | 145 | 488 | 21 | 56 | 32 | 0 | | 48 | 6.04 | 0 | | 5 | 0.63 |
| | | 2005 | 82 | 701 | 701 | 90 | 417 | 27 | 22 | 67 | 0 | | 60 | 8.56 | 0 | | 18 | 2.57 |
| | | 2006 | 49 | 595 | 590 | 74 | 329 | 20 | 45 | 57 | 0 | | 57 | 9.66 | 0 | | 9 | 1.53 |
| | | 2007 | 44 | 493 | 489 | 24 | 380 | 11 | 25 | 20 | 0 | | 27 | 5.52 | 0 | | 4 | 0.82 |
| | | 2008 | 60 | 496 | 492 | 170 | 195 | 15 | 31 | 25 | 0 | | 50 | 10.1 | 0 | | 7 | 1.42 |
| | | 2009 | 44 | 698 | 694 | 62 | 462 | 25 | 79 | 22 | 0 | | 33 | 4.76 | 0 | | 12 | 1.73 |
| | 2066 | 2003 | 78 | 806 | 806 | 388 | 373 | 27 | 1 | 14 | 3 | 0.37 | 0 | | 0 | | 0 | |
| | | 2004 | 57 | 803 | 799 | 97 | 550 | 73 | 0 | 51 | 25 | 3.13 | 0 | | 3 | 0.38 | 0 | |
| | | 2005 | 69 | 704 | 701 | 69 | 531 | 77 | 3 | 5 | 15 | 2.14 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 82 | 599 | 599 | 106 | 397 | 64 | 8 | 3 | 17 | 2.84 | 0 | | 4 | 0.67 | 0 | |
| | | 2007 | 45 | 498 | 496 | 35 | 372 | 33 | 18 | 34 | 3 | 0.6 | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 58 | 500 | 494 | 169 | 223 | 58 | 23 | 17 | 3 | 0.61 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 41 | 710 | 698 | 3 | 579 | 50 | 32 | 30 | 4 | 0.57 | 0 | | 0 | | 0 | |
| | 2067 | 2003 | 59 | 801 | 801 | 122 | 508 | 8 | 11 | 152 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 56 | 795 | 793 | 70 | 576 | 15 | 20 | 112 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 68 | 702 | 702 | 62 | 445 | 27 | 23 | 145 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 50 | 602 | 602 | 34 | 406 | 13 | 7 | 143 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 61 | 497 | 497 | 8 | 364 | 10 | 7 | 108 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 57 | 492 | 491 | 24 | 332 | 6 | 13 | 116 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 40 | 697 | 688 | 30 | 416 | 45 | 32 | 165 | 0 | | 0 | | 0 | | 0 | |
| | 2068 | 2003 | 61 | 794 | 794 | 283 | 374 | 8 | 13 | 114 | 0 | | 2 | 0.25 | 0 | | 0 | |
| | | 2004 | 67 | 796 | 796 | 132 | 371 | 30 | 28 | 234 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 67 | 705 | 705 | 99 | 315 | 36 | 36 | 216 | 0 | | 3 | 0.43 | 0 | | 0 | |
| | | 2006 | 51 | 598 | 598 | 113 | 310 | 19 | 16 | 140 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 60 | 493 | 493 | 137 | 219 | 30 | 26 | 82 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 72 | 499 | 498 | 235 | 141 | 8 | 38 | 76 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 65 | 699 | 683 | 34 | 381 | 9 | 51 | 208 | 0 | | 0 | | 0 | | 0 | |

| Area (5B) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2069 | 2003 | 65 | 802 | 802 | 1 | 453 | 1 | 3 | 343 | 0 | | 1 | 0.12 | 0 | | 0 | |
| | | 2004 | 66 | 798 | 791 | 5 | 486 | 1 | 16 | 282 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 68 | 701 | 699 | 23 | 355 | 15 | 29 | 269 | 0 | | 11 | 1.57 | 0 | | 0 | |
| | | 2006 | 53 | 599 | 588 | 41 | 367 | 10 | 39 | 127 | 0 | | 4 | 0.68 | 0 | | 0 | |
| | | 2007 | 75 | 498 | 497 | 9 | 312 | 10 | 28 | 132 | 0 | | 6 | 1.21 | 0 | | 0 | |
| | | 2008 | 71 | 497 | 492 | 16 | 242 | 8 | 137 | 82 | 0 | | 7 | 1.42 | 0 | | 0 | |
| | | 2009 | 64 | 702 | 689 | 75 | 368 | 16 | 133 | 73 | 0 | | 24 | 3.48 | 0 | | 1 | 0.15 |
| | 2070 | 2003 | 66 | 799 | 799 | 30 | 472 | 24 | 191 | 11 | 0 | | 69 | 8.64 | 0 | | 2 | 0.25 |
| | | 2004 | 65 | 792 | 783 | 47 | 479 | 17 | 129 | 0 | 0 | | 111 | 14.1 | 0 | | 0 | |
| | | 2005 | 52 | 700 | 700 | 42 | 418 | 20 | 128 | 22 | 0 | | 70 | 10 | 0 | | 0 | |
| | | 2006 | 54 | 600 | 587 | 51 | 404 | 9 | 58 | 50 | 0 | | 17 | 2.9 | 0 | | 0 | |
| | | 2007 | 78 | 497 | 496 | 2 | 320 | 3 | 21 | 111 | 0 | | 39 | 7.86 | 0 | | 1 | 0.2 |
| | | 2008 | 68 | 493 | 490 | 5 | 230 | 5 | 102 | 77 | 0 | | 73 | 14.9 | 0 | | 0 | |
| | | 2009 | 63 | 697 | 689 | 23 | 375 | 12 | 109 | 67 | 0 | | 103 | 14.9 | 0 | | 0 | |
| | 2071 | 2003 | 49 | 791 | 791 | 69 | 386 | 67 | 65 | 138 | 8 | 1.01 | 58 | 7.33 | 0 | | 0 | |
| | | 2004 | 62 | 797 | 790 | 142 | 327 | 70 | 109 | 1 | 7 | 0.89 | 134 | 16.9 | 0 | | 0 | |
| | | 2005 | 48 | 701 | 699 | 17 | 365 | 69 | 43 | 116 | 6 | 0.86 | 83 | 11.8 | 0 | | 0 | |
| | | 2006 | 67 | 599 | 596 | 3 | 345 | 40 | 58 | 76 | 7 | 1.17 | 67 | 11.2 | 0 | | 0 | |
| | | 2007 | 79 | 497 | 494 | 3 | 291 | 36 | 26 | 77 | 3 | 0.61 | 58 | 11.7 | 0 | | 0 | |
| | | 2008 | 69 | 496 | 493 | 153 | 130 | 62 | 38 | 28 | 5 | 1.01 | 77 | 15.6 | 0 | | 0 | |
| | | 2009 | 125 | 693 | 689 | 2 | 244 | 36 | 46 | 271 | 5 | 0.73 | 85 | 12.3 | 0 | | 0 | |
| | 2072 | 2003 | 50 | 793 | 793 | 94 | 488 | 129 | 19 | 23 | 20 | 2.52 | 1 | 0.13 | 19 | 2.4 | 0 | |
| | | 2004 | 63 | 796 | 786 | 148 | 408 | 157 | 30 | 1 | 29 | 3.69 | 0 | | 13 | 1.65 | 0 | |
| | | 2005 | 47 | 703 | 696 | 103 | 411 | 71 | 30 | 48 | 28 | 4.02 | 0 | | 5 | 0.72 | 0 | |
| | | 2006 | 66 | 600 | 600 | 41 | 341 | 76 | 22 | 106 | 15 | 2.5 | 0 | | 0 | | 0 | |
| | | 2007 | 80 | 501 | 501 | 6 | 328 | 78 | 11 | 68 | 9 | 1.8 | 0 | | 0 | | 0 | |
| | | 2008 | 58 | 494 | 482 | 22 | 329 | 79 | 9 | 17 | 26 | 5.39 | 0 | | 0 | | 0 | |
| | | 2009 | 124 | 696 | 681 | 84 | 316 | 114 | 31 | 103 | 33 | 4.85 | 0 | | 1 | 0.15 | 0 | |
| | 2073 | 2003 | 80 | 804 | 804 | 497 | 283 | 12 | 8 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 40 | 799 | 798 | 437 | 277 | 28 | 19 | 32 | 4 | 0.5 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 55 | 701 | 696 | 151 | 418 | 73 | 16 | 23 | 11 | 1.58 | 4 | 0.57 | 0 | | 0 | |
| | | 2006 | 81 | 596 | 595 | 42 | 401 | 84 | 49 | 19 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 46 | 503 | 501 | 5 | 416 | 22 | 31 | 23 | 2 | 0.4 | 2 | 0.4 | 0 | | 0 | |
| | | 2008 | 79 | 500 | 492 | 196 | 146 | 38 | 102 | 8 | 2 | 0.41 | 0 | | 0 | | 0 | |
| | | 2009 | 68 | 698 | 690 | 89 | 413 | 91 | 32 | 50 | 16 | 2.32 | 0 | | 0 | | 0 | |
| | 2074 | 2003 | 60 | 800 | 800 | 18 | 515 | 0 | 24 | 243 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 59 | 791 | 791 | 32 | 415 | 7 | 20 | 317 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 64 | 703 | 702 | 0 | 425 | 0 | 2 | 275 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 78 | 598 | 598 | 6 | 406 | 2 | 14 | 171 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 58 | 501 | 500 | 38 | 310 | 9 | 33 | 110 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 73 | 498 | 498 | 108 | 207 | 2 | 20 | 159 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 85 | 693 | 678 | 0 | 299 | 1 | 33 | 345 | 0 | | 0 | | 0 | | 0 | |
| | 2075 | 2003 | 67 | 798 | 798 | 4 | 572 | 8 | 26 | 188 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 60 | 800 | 800 | 86 | 482 | 97 | 41 | 94 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 65 | 701 | 700 | 0 | 422 | 0 | 2 | 276 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 77 | 597 | 597 | 58 | 375 | 9 | 37 | 120 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 59 | 502 | 501 | 188 | 214 | 17 | 31 | 51 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 74 | 492 | 490 | 4 | 277 | 4 | 43 | 162 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 81 | 698 | 690 | 7 | 338 | 0 | 50 | 295 | 0 | | 0 | | 0 | | 0 | |
| | 2076 | 2003 | 68 | 799 | 799 | 486 | 221 | 4 | 61 | 26 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 64 | 789 | 786 | 175 | 408 | 51 | 102 | 50 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 49 | 702 | 701 | 123 | 437 | 5 | 51 | 84 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | | 2006 | 68 | 600 | 598 | 1 | 428 | 3 | 8 | 158 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 53 | 502 | 502 | 1 | 336 | 0 | 41 | 124 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 54 | 499 | 499 | 3 | 277 | 1 | 9 | 209 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 82 | 688 | 683 | 2 | 369 | 4 | 93 | 208 | 0 | | 6 | 0.88 | 0 | | 1 | 0.15 |
| | 2077 | 2003 | 69 | 795 | 795 | 103 | 527 | 80 | 31 | 35 | 14 | 1.76 | 5 | 0.63 | 0 | | 0 | |
| | | 2004 | 61 | 796 | 773 | 132 | 457 | 124 | 31 | 0 | 9 | 1.16 | 11 | 1.42 | 9 | 1.16 | 0 | |
| | | 2005 | 51 | 701 | 700 | 23 | 493 | 94 | 11 | 70 | 7 | 1 | 0 | | 2 | 0.29 | 0 | |
| | | 2006 | 69 | 596 | 595 | 9 | 454 | 85 | 2 | 38 | 5 | 0.84 | 0 | | 5 | 0.84 | 0 | |
| | | 2007 | 52 | 496 | 492 | 138 | 275 | 55 | 8 | 8 | 6 | 1.22 | 0 | | 2 | 0.41 | 0 | |
| | | 2008 | 55 | 499 | 494 | 30 | 302 | 87 | 34 | 6 | 21 | 4.25 | 3 | 0.61 | 11 | 2.23 | 0 | |
| | | 2009 | 86 | 691 | 682 | 58 | 438 | 70 | 22 | 77 | 17 | 2.49 | 0 | | 0 | | 0 | |
| | 2078 | 2003 | 79 | 801 | 801 | 68 | 668 | 26 | 35 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 42 | 798 | 792 | 134 | 605 | 33 | 11 | 4 | 2 | 0.25 | 2 | 0.25 | 1 | 0.13 | 0 | |
| | | 2005 | 56 | 702 | 701 | 23 | 529 | 62 | 40 | 10 | 5 | 0.71 | 15 | 2.14 | 0 | | 18 | 2.57 |
| | | 2006 | 79 | 602 | 600 | 40 | 469 | 46 | 25 | 1 | 17 | 2.83 | 0 | | 0 | | 3 | 0.5 |

| Area (5B) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2078 | 2007 | 47 | 497 | 497 | 13 | 414 | 24 | 20 | 6 | 11 | 2.21 | 4 | 0.8 | 0 | | 5 | 1.01 |
| | | 2008 | 78 | 495 | 485 | 87 | 253 | 38 | 79 | 8 | 15 | 3.09 | 5 | 1.03 | 0 | | 0 | |
| | | 2009 | 69 | 680 | 670 | 10 | 492 | 57 | 54 | 15 | 40 | 5.97 | 2 | 0.3 | 0 | | 0 | |
| | 2079 | 2003 | 81 | 802 | 802 | 33 | 600 | 18 | 120 | 31 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 41 | 797 | 795 | 127 | 563 | 12 | 88 | 5 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 57 | 702 | 702 | 31 | 419 | 83 | 146 | 24 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 80 | 600 | 599 | 47 | 383 | 26 | 133 | 12 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 56 | 494 | 493 | 1 | 349 | 13 | 98 | 32 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 80 | 500 | 494 | 80 | 241 | 22 | 144 | 10 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 70 | 699 | 695 | 7 | 402 | 15 | 245 | 26 | 0 | | 0 | | 0 | | 0 | |
| | 2080 | 2003 | 73 | 795 | 795 | 95 | 460 | 2 | 30 | 163 | 0 | | 42 | 5.28 | 0 | | 3 | 0.38 |
| | | 2004 | 58 | 795 | 788 | 293 | 347 | 12 | 66 | 43 | 0 | | 26 | 3.3 | 0 | | 1 | 0.13 |
| | | 2005 | 61 | 701 | 699 | 162 | 326 | 4 | 48 | 147 | 0 | | 10 | 1.43 | 0 | | 2 | 0.29 |
| | | 2006 | 75 | 598 | 598 | 21 | 407 | 15 | 110 | 32 | 0 | | 12 | 2.01 | 0 | | 1 | 0.17 |
| | | 2007 | 57 | 495 | 491 | 49 | 303 | 14 | 30 | 86 | 0 | | 9 | 1.83 | 0 | | 2 | 0.41 |
| | | 2008 | 81 | 495 | 492 | 22 | 274 | 4 | 119 | 59 | 0 | | 11 | 2.24 | 0 | | 3 | 0.61 |
| | | 2009 | 83 | 692 | 685 | 49 | 322 | 6 | 120 | 168 | 0 | | 15 | 2.19 | 0 | | 5 | 0.73 |
| | 2081 | 2003 | 71 | 800 | 800 | 424 | 247 | 4 | 36 | 89 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 47 | 800 | 798 | 12 | 534 | 19 | 52 | 181 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 63 | 700 | 700 | 63 | 459 | 9 | 48 | 121 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 76 | 603 | 603 | 62 | 426 | 30 | 39 | 46 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 55 | 499 | 499 | 4 | 353 | 8 | 54 | 80 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 77 | 499 | 496 | 4 | 313 | 3 | 36 | 140 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 84 | 690 | 678 | 73 | 429 | 6 | 41 | 129 | 0 | | 0 | | 0 | | 0 | |
| | 2082 | 2003 | 70 | 800 | 800 | 4 | 711 | 48 | 22 | 1 | 12 | 1.5 | 0 | | 2 | 0.25 | 0 | |
| | | 2004 | 48 | 793 | 787 | 66 | 585 | 45 | 25 | 4 | 34 | 4.32 | 0 | | 28 | 3.56 | 0 | |
| | | 2005 | 50 | 703 | 697 | 68 | 514 | 54 | 11 | 26 | 20 | 2.87 | 0 | | 4 | 0.57 | 0 | |
| | | 2006 | 70 | 603 | 603 | 21 | 493 | 55 | 9 | 10 | 15 | 2.49 | 0 | | 1 | 0.17 | 0 | |
| | | 2007 | 54 | 499 | 499 | 43 | 345 | 48 | 17 | 33 | 13 | 2.61 | 0 | | 0 | | 0 | |
| | | 2008 | 75 | 493 | 490 | 105 | 235 | 83 | 16 | 12 | 20 | 4.08 | 0 | | 19 | 3.88 | 0 | |
| | | 2009 | 80 | 702 | 688 | 0 | 514 | 68 | 43 | 39 | 22 | 3.2 | 0 | | 3 | 0.44 | 0 | |
| | 2083 | 2003 | 82 | 800 | 800 | 70 | 509 | 98 | 50 | 57 | 16 | 2 | 0 | | 0 | | 0 | |
| | | 2004 | 44 | 795 | 787 | 130 | 523 | 92 | 10 | 11 | 20 | 2.54 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 58 | 702 | 701 | 99 | 425 | 129 | 8 | 17 | 23 | 3.28 | 0 | | 0 | | 0 | |
| | | 2006 | 72 | 597 | 597 | 44 | 405 | 58 | 21 | 26 | 43 | 7.2 | 0 | | 0 | | 0 | |
| | | 2007 | 49 | 499 | 497 | 45 | 380 | 14 | 23 | 25 | 10 | 2.01 | 0 | | 0 | | 0 | |
| | | 2008 | 83 | 499 | 498 | 93 | 214 | 19 | 45 | 12 | 115 | 23.0 | 0 | | 0 | | 0 | |
| | | 2009 | 75 | 699 | 686 | 5 | 537 | 21 | 33 | 17 | 73 | 10.6 | 2 | 0.29 | 0 | | 0 | |
| | 2084 | 2003 | 84 | 805 | 805 | 228 | 443 | 13 | 77 | 41 | 0 | | 3 | 0.37 | 0 | | 0 | |
| | | 2004 | 43 | 798 | 789 | 216 | 411 | 72 | 73 | 4 | 0 | | 13 | 1.65 | 0 | | 0 | |
| | | 2005 | 60 | 702 | 702 | 20 | 465 | 62 | 77 | 74 | 0 | | 4 | 0.57 | 0 | | 0 | |
| | | 2006 | 73 | 595 | 592 | 50 | 403 | 24 | 105 | 8 | 0 | | 2 | 0.34 | 0 | | 0 | |
| | | 2007 | 50 | 501 | 500 | 31 | 323 | 47 | 72 | 21 | 0 | | 6 | 1.2 | 0 | | 0 | |
| | | 2008 | 82 | 498 | 493 | 146 | 180 | 38 | 77 | 43 | 0 | | 9 | 1.83 | 0 | | 0 | |
| | | 2009 | 76 | 694 | 683 | 65 | 410 | 14 | 87 | 105 | 0 | | 2 | 0.29 | 0 | | 0 | |
| | 2085 | 2003 | 72 | 801 | 801 | 284 | 487 | 5 | 5 | 19 | 1 | 0.12 | 0 | | 0 | | 0 | |
| | | 2004 | 46 | 798 | 797 | 350 | 344 | 22 | 26 | 33 | 22 | 2.76 | 0 | | 0 | | 0 | |
| | | 2005 | 62 | 703 | 702 | 23 | 628 | 13 | 7 | 25 | 7 | 1 | 0 | | 0 | | 0 | |
| | | 2006 | 74 | 604 | 603 | 17 | 494 | 25 | 14 | 53 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 51 | 502 | 502 | 55 | 392 | 6 | 16 | 33 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 76 | 502 | 490 | 155 | 267 | 7 | 11 | 38 | 12 | 2.45 | 0 | | 0 | | 0 | |
| | | 2009 | 71 | 697 | 690 | 34 | 574 | 30 | 5 | 17 | 30 | 4.35 | 0 | | 0 | | 0 | |
| | 2086 | 2003 | 83 | 803 | 803 | 489 | 262 | 18 | 20 | 5 | 9 | 1.12 | 0 | | 0 | | 0 | |
| | | 2004 | 45 | 800 | 791 | 197 | 483 | 22 | 15 | 2 | 68 | 8.6 | 4 | 0.51 | 0 | | 0 | |
| | | 2008 | 84 | 500 | 496 | 107 | 220 | 58 | 41 | 17 | 49 | 9.88 | 3 | 0.6 | 1 | 0.2 | 0 | |
| | 2087 | 2003 | 3 | 795 | 795 | 6 | 639 | 114 | 7 | 4 | 12 | 1.51 | 0 | | 13 | 1.64 | 0 | |
| | | 2004 | 41 | 792 | 790 | 4 | 523 | 137 | 10 | 0 | 27 | 3.42 | 1 | 0.13 | 88 | 11.1 | 0 | |
| | | 2005 | 33 | 699 | 690 | 27 | 448 | 156 | 8 | 16 | 11 | 1.59 | 0 | | 25 | 3.62 | 0 | |
| | | 2006 | 12 | 595 | 571 | 10 | 394 | 128 | 19 | 20 | 2 | 0.35 | 0 | | 1 | 0.18 | 0 | |
| | | 2007 | 17 | 482 | 473 | 1 | 354 | 93 | 5 | 19 | 0 | | 0 | | 3 | 0.63 | 0 | |
| | | 2008 | 3 | 488 | 488 | 34 | 302 | 103 | 4 | 2 | 19 | 3.89 | 0 | | 24 | 4.92 | 0 | |
| | | 2009 | 87 | 690 | 676 | 10 | 440 | 163 | 21 | 36 | 7 | 1.04 | 0 | | 1 | 0.15 | 0 | |
| | 2088 | 2003 | 4 | 784 | 784 | 267 | 366 | 99 | 7 | 6 | 39 | 4.97 | 0 | | 0 | | 0 | |
| | | 2004 | 42 | 797 | 794 | 77 | 497 | 82 | 108 | 2 | 27 | 3.4 | 0 | | 1 | 0.13 | 0 | |
| | | 2005 | 31 | 696 | 693 | 173 | 291 | 96 | 15 | 42 | 76 | 10.9 | 0 | | 0 | | 0 | |
| | | 2006 | 13 | 598 | 583 | 40 | 309 | 39 | 17 | 113 | 65 | 11.1 | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 16 | 485 | 483 | 1 | 355 | 39 | 10 | 70 | 9 | 1.86 | 0 | | 0 | | 0 | |

| Area (5B) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2088** | 2008 | 4 | 490 | 487 | 131 | 223 | 52 | 44 | 21 | 15 | 3.08 | 0 | | 1 | 0.21 | 0 | |
| | | 2009 | 123 | 694 | 678 | 88 | 251 | 86 | 48 | 164 | 41 | 6.05 | 0 | | 1 | 0.15 | 0 | |
| | **2089** | 2003 | 1 | 793 | 793 | 47 | 660 | 45 | 29 | 4 | 4 | 0.5 | 0 | | 4 | 0.5 | 0 | |
| | | 2004 | 10 | 803 | 800 | 121 | 548 | 64 | 16 | 36 | 14 | 1.75 | 0 | | 1 | 0.12 | 0 | |
| | | 2005 | 35 | 692 | 688 | 165 | 385 | 42 | 16 | 53 | 24 | 3.49 | 2 | 0.29 | 1 | 0.15 | 0 | |
| | | 2006 | 10 | 585 | 580 | 21 | 314 | 6 | 53 | 185 | 0 | | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 10 | 493 | 489 | 2 | 368 | 24 | 24 | 57 | 14 | 2.86 | 0 | | 0 | | 0 | |
| | | 2008 | 15 | 503 | 501 | 221 | 220 | 33 | 6 | 1 | 19 | 3.79 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 88 | 694 | 686 | 0 | 545 | 40 | 17 | 69 | 6 | 0.87 | 0 | | 9 | 1.31 | 0 | |
| | **2090** | 2003 | 2 | 786 | 786 | 108 | 399 | 70 | 109 | 41 | 7 | 0.89 | 52 | 6.62 | 0 | | 0 | |
| | | 2004 | 40 | 804 | 800 | 97 | 426 | 83 | 98 | 2 | 27 | 3.38 | 67 | 8.38 | 0 | | 0 | |
| | | 2005 | 34 | 701 | 694 | 135 | 296 | 82 | 41 | 101 | 3 | 0.43 | 36 | 5.19 | 0 | | 0 | |
| | | 2006 | 11 | 566 | 550 | 22 | 258 | 30 | 55 | 119 | 13 | 2.36 | 53 | 9.64 | 0 | | 0 | |
| | | 2007 | 18 | 492 | 485 | 0 | 320 | 23 | 43 | 90 | 1 | 0.21 | 8 | 1.65 | 0 | | 0 | |
| | | 2008 | 2 | 494 | 491 | 148 | 182 | 41 | 69 | 23 | 7 | 1.43 | 21 | 4.28 | 0 | | 0 | |
| | | 2009 | 90 | 696 | 691 | 4 | 318 | 53 | 48 | 175 | 4 | 0.58 | 90 | 13.0 | 0 | | 0 | |
| | **2091** | 2003 | 5 | 788 | 788 | 253 | 276 | 40 | 160 | 18 | 9 | 1.14 | 32 | 4.06 | 0 | | 0 | |
| | | 2004 | 39 | 805 | 798 | 39 | 503 | 56 | 109 | 5 | 47 | 5.89 | 39 | 4.89 | 0 | | 0 | |
| | | 2005 | 32 | 694 | 688 | 101 | 255 | 48 | 128 | 76 | 34 | 4.94 | 46 | 6.69 | 0 | | 0 | |
| | | 2006 | 14 | 590 | 582 | 11 | 270 | 34 | 67 | 166 | 16 | 2.75 | 20 | 3.44 | 0 | | 0 | |
| | | 2007 | 15 | 488 | 478 | 0 | 292 | 7 | 13 | 137 | 7 | 1.46 | 22 | 4.6 | 0 | | 0 | |
| | | 2008 | 1 | 477 | 476 | 181 | 170 | 33 | 29 | 21 | 19 | 3.99 | 24 | 5.04 | 0 | | 0 | |
| | | 2009 | 122 | 691 | 684 | 31 | 230 | 52 | 68 | 238 | 19 | 2.78 | 47 | 6.87 | 0 | | 0 | |
| | **2092** | 2003 | 6 | 788 | 788 | 72 | 533 | 48 | 104 | 16 | 2 | 0.25 | 0 | | 13 | 1.65 | 0 | |
| | | 2004 | 35 | 799 | 141 | 10 | 74 | 30 | 18 | 0 | 0 | | 0 | | 9 | 6.38 | 0 | |
| | | 2005 | 30 | 699 | 693 | 198 | 267 | 87 | 102 | 38 | 1 | 0.14 | 0 | | 0 | | 0 | |
| | | 2006 | 15 | 589 | 433 | 16 | 209 | 18 | 92 | 98 | 2 | 0.46 | 0 | | 0 | | 0 | |
| | | 2007 | 12 | 481 | 479 | 0 | 285 | 69 | 66 | 54 | 1 | 0.21 | 0 | | 4 | 0.84 | 0 | |
| | | 2008 | 6 | 496 | 489 | 80 | 284 | 63 | 50 | 5 | 1 | 0.2 | 0 | | 6 | 1.23 | 0 | |
| | | 2009 | 121 | 692 | 679 | 71 | 315 | 163 | 36 | 84 | 6 | 0.88 | 0 | | 4 | 0.59 | 0 | |
| | **2093** | 2003 | 7 | 789 | 789 | 30 | 405 | 36 | 68 | 21 | 47 | 5.96 | 182 | 23.0 | 0 | | 0 | |
| | | 2004 | 34 | 795 | 791 | 20 | 541 | 18 | 125 | 0 | 16 | 2.02 | 71 | 8.98 | 0 | | 0 | |
| | | 2005 | 29 | 657 | 649 | 68 | 317 | 28 | 59 | 66 | 26 | 4.01 | 87 | 13.4 | 0 | | 0 | |
| | | 2006 | 16 | 600 | 584 | 10 | 264 | 21 | 48 | 146 | 10 | 1.71 | 86 | 14.7 | 0 | | 0 | |
| | | 2007 | 11 | 495 | 484 | 0 | 220 | 9 | 4 | 194 | 6 | 1.24 | 53 | 10.9 | 0 | | 0 | |
| | | 2008 | 7 | 490 | 479 | 14 | 243 | 33 | 81 | 3 | 17 | 3.55 | 89 | 18.5 | 0 | | 0 | |
| | | 2009 | 120 | 546 | 531 | 30 | 253 | 20 | 41 | 69 | 27 | 5.08 | 93 | 17.5 | 0 | | 0 | |
| | **2094** | 2003 | 78 | 795 | 795 | 228 | 430 | 53 | 46 | 3 | 21 | 2.64 | 14 | 1.76 | 0 | | 0 | |
| | | 2004 | 12 | 800 | 798 | 88 | 415 | 114 | 38 | 29 | 87 | 10.9 | 25 | 3.14 | 0 | | 0 | |
| | | 2005 | 37 | 700 | 698 | 149 | 307 | 66 | 12 | 130 | 25 | 3.58 | 9 | 1.29 | 0 | | 0 | |
| | | 2006 | 9 | 593 | 585 | 53 | 266 | 121 | 37 | 51 | 51 | 8.72 | 6 | 1.03 | 0 | | 0 | |
| | | 2007 | 9 | 489 | 480 | 36 | 244 | 74 | 21 | 70 | 28 | 5.83 | 7 | 1.46 | 0 | | 0 | |
| | | 2008 | 16 | 495 | 493 | 203 | 178 | 54 | 14 | 19 | 18 | 3.65 | 8 | 1.62 | 0 | | 0 | |
| | | 2009 | 79 | 701 | 681 | 0 | 421 | 90 | 25 | 84 | 37 | 5.43 | 24 | 3.52 | 0 | | 0 | |
| | **2095** | 2003 | 77 | 793 | 793 | 38 | 576 | 9 | 127 | 2 | 0 | | 41 | 5.17 | 0 | | 0 | |
| | | 2004 | 11 | 800 | 798 | 63 | 458 | 16 | 213 | 10 | 0 | | 38 | 4.76 | 0 | | 0 | |
| | | 2005 | 23 | 702 | 697 | 44 | 425 | 9 | 69 | 122 | 0 | | 28 | 4.02 | 0 | | 0 | |
| | | 2006 | 8 | 583 | 574 | 56 | 225 | 32 | 85 | 111 | 0 | | 66 | 11.5 | 0 | | 0 | |
| | | 2007 | 8 | 492 | 485 | 25 | 279 | 14 | 68 | 80 | 0 | | 19 | 3.92 | 0 | | 0 | |
| | | 2008 | 14 | 494 | 494 | 28 | 315 | 7 | 116 | 14 | 0 | | 14 | 2.83 | 0 | | 0 | |
| | | 2009 | 91 | 699 | 678 | 38 | 331 | 14 | 188 | 77 | 0 | | 30 | 4.42 | 0 | | 0 | |
| | **2096** | 2003 | 76 | 794 | 794 | 46 | 574 | 16 | 155 | 3 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 37 | 805 | 803 | 141 | 492 | 23 | 144 | 3 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 36 | 700 | 697 | 52 | 456 | 5 | 85 | 98 | 0 | | 3 | 0.43 | 0 | | 0 | |
| | | 2006 | 20 | 618 | 613 | 27 | 313 | 12 | 73 | 188 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 7 | 490 | 488 | 6 | 285 | 5 | 42 | 150 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 11 | 500 | 494 | 33 | 289 | 9 | 151 | 12 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 89 | 698 | 693 | 26 | 307 | 27 | 139 | 194 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | **2097** | 2003 | 11 | 791 | 791 | 3 | 666 | 116 | 0 | 3 | 0 | | 0 | | 3 | 0.38 | 0 | |
| | | 2004 | 38 | 802 | 798 | 15 | 634 | 135 | 10 | 1 | 2 | 0.25 | 0 | | 1 | 0.13 | 0 | |
| | | 2005 | 28 | 696 | 694 | 45 | 492 | 132 | 7 | 17 | 0 | | 0 | | 2 | 0.29 | 0 | |
| | | 2006 | 19 | 586 | 582 | 29 | 367 | 153 | 10 | 17 | 1 | 0.17 | 0 | | 5 | 0.86 | 0 | |
| | | 2007 | 6 | 489 | 487 | 0 | 392 | 43 | 5 | 47 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 12 | 497 | 497 | 30 | 357 | 104 | 2 | 0 | 1 | 0.2 | 0 | | 3 | 0.6 | 0 | |
| | | 2009 | 117 | 697 | 687 | 35 | 553 | 71 | 4 | 19 | 1 | 0.15 | 0 | | 4 | 0.58 | 0 | |
| | **2098** | 2003 | 9 | 785 | 785 | 307 | 348 | 40 | 76 | 9 | 5 | 0.64 | 0 | | 0 | | 0 | |
| | | 2004 | 36 | 804 | 803 | 100 | 516 | 96 | 79 | 1 | 11 | 1.37 | 0 | | 0 | | 0 | |

| Area | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (5B) | | | | | | | | | | | | | | | | | | |
| | 2098 | 2005 | 24 | 699 | 695 | 233 | 260 | 71 | 30 | 99 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | | 2006 | 18 | 596 | 589 | 11 | 305 | 22 | 20 | 231 | 3 | 0.51 | 0 | | 0 | | 0 | |
| | | 2007 | 13 | 495 | 494 | 0 | 239 | 14 | 35 | 204 | 2 | 0.4 | 0 | | 0 | | 0 | |
| | | 2008 | 5 | 499 | 498 | 273 | 140 | 58 | 22 | 3 | 2 | 0.4 | 0 | | 0 | | 0 | |
| | | 2009 | 118 | 702 | 700 | 253 | 246 | 81 | 29 | 80 | 11 | 1.57 | 0 | | 0 | | 0 | |
| | 2099 | 2003 | 8 | 792 | 792 | 235 | 462 | 17 | 61 | 8 | 1 | 0.13 | 8 | 1.01 | 0 | | 0 | |
| | | 2004 | 33 | 799 | 794 | 179 | 460 | 16 | 123 | 4 | 0 | | 12 | 1.51 | 0 | | 0 | |
| | | 2005 | 25 | 699 | 697 | 138 | 318 | 15 | 41 | 182 | 2 | 0.29 | 1 | 0.14 | 0 | | 0 | |
| | | 2006 | 17 | 584 | 582 | 5 | 359 | 5 | 11 | 201 | 0 | | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 14 | 493 | 486 | 0 | 266 | 4 | 8 | 151 | 0 | | 2 | 0.41 | 0 | | 0 | |
| | | 2008 | 8 | 495 | 489 | 41 | 343 | 7 | 33 | 62 | 1 | 0.2 | 3 | 0.61 | 0 | | 0 | |
| | | 2009 | 119 | 692 | 691 | 239 | 309 | 8 | 23 | 106 | 5 | 0.72 | 2 | 0.29 | 0 | | 0 | |
| | 2100 | 2007 | 71 | 479 | 479 | 111 | 231 | 12 | 20 | 20 | 33 | 6.89 | 52 | 10.8 | 0 | | 0 | |
| | | 2009 | 73 | 695 | 679 | 30 | 509 | 22 | 32 | 44 | 9 | 1.33 | 34 | 5.01 | 0 | | 0 | |
| | 2101 | 2004 | 14 | 797 | 795 | 30 | 656 | 20 | 3 | 79 | 7 | 0.88 | 0 | | 0 | | 0 | |
| | | 2006 | 3 | 588 | 577 | 34 | 447 | 24 | 13 | 57 | 2 | 0.35 | 0 | | 0 | | 0 | |
| | | 2007 | 70 | 492 | 490 | 193 | 270 | 6 | 4 | 14 | 3 | 0.61 | 0 | | 0 | | 0 | |
| | | 2009 | 72 | 694 | 689 | 2 | 608 | 25 | 12 | 34 | 8 | 1.16 | 0 | | 0 | | 0 | |
| | 2102 | 2003 | 79 | 796 | 796 | 232 | 498 | 38 | 22 | 3 | 2 | 0.25 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 8 | 800 | 799 | 56 | 555 | 101 | 7 | 17 | 63 | 7.88 | 0 | | 0 | | 0 | |
| | | 2006 | 4 | 589 | 579 | 27 | 326 | 105 | 19 | 55 | 48 | 8.29 | 0 | | 0 | | 0 | |
| | | 2009 | 77 | 693 | 685 | 139 | 413 | 39 | 8 | 53 | 33 | 4.82 | 0 | | 0 | | 0 | |
| | 2103 | 2004 | 9 | 799 | 796 | 290 | 372 | 20 | 21 | 49 | 44 | 5.53 | 0 | | 0 | | 0 | |
| | | 2009 | 78 | 697 | 681 | 32 | 419 | 19 | 11 | 89 | 112 | 16.4 | 0 | | 0 | | 0 | |
| | 2104 | 2006 | 21 | 586 | 586 | 5 | 298 | 28 | 43 | 213 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 4 | 493 | 491 | 0 | 321 | 3 | 8 | 159 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 92 | 695 | 695 | 14 | 357 | 28 | 71 | 223 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | 2105 | 2004 | 2 | 804 | 801 | 3 | 586 | 206 | 1 | 0 | 1 | 0.12 | 0 | | 4 | 0.5 | 0 | |
| | | 2006 | 33 | 594 | 583 | 7 | 398 | 156 | 4 | 9 | 3 | 0.51 | 0 | | 7 | 1.2 | 0 | |
| | | 2009 | 116 | 696 | 691 | 0 | 505 | 172 | 2 | 9 | 0 | | 0 | | 3 | 0.43 | 0 | |
| | 2106 | 2004 | 32 | 800 | 798 | 160 | 424 | 30 | 165 | 2 | 7 | 0.88 | 10 | 1.25 | 0 | | 0 | |
| | | 2005 | 11 | 698 | 686 | 74 | 318 | 10 | 43 | 191 | 41 | 5.98 | 9 | 1.31 | 0 | | 0 | |
| | | 2006 | 34 | 591 | 583 | 180 | 235 | 20 | 19 | 89 | 40 | 6.86 | 0 | | 0 | | 0 | |
| | | 2007 | 80 | 499 | 495 | 61 | 256 | 9 | 20 | 142 | 7 | 1.41 | 0 | | 0 | | 0 | |
| | | 2009 | 115 | 690 | 678 | 16 | 487 | 16 | 53 | 71 | 25 | 3.69 | 10 | 1.47 | 0 | | 0 | |
| | 2107 | 2003 | 16 | 793 | 791 | 324 | 390 | 35 | 33 | 2 | 7 | 0.88 | 0 | | 0 | | 0 | |
| | | 2006 | 35 | 594 | 589 | 40 | 329 | 52 | 90 | 78 | 1 | 0.17 | 0 | | 0 | | 0 | |
| | | 2007 | 81 | 495 | 489 | 15 | 286 | 6 | 87 | 94 | 1 | 0.2 | 0 | | 0 | | 0 | |
| | | 2009 | 114 | 698 | 685 | 25 | 443 | 31 | 67 | 110 | 11 | 1.61 | 0 | | 0 | | 0 | |
| 5C/D | | | | | | | | | | | | | | | | | | |
| | 2086 | 2005 | 59 | 702 | 700 | 64 | 535 | 37 | 11 | 7 | 45 | 6.43 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 71 | 597 | 596 | 55 | 368 | 57 | 11 | 17 | 86 | 14.4 | 1 | 0.17 | 1 | 0.17 | 0 | |
| | | 2007 | 48 | 487 | 475 | 72 | 303 | 37 | 10 | 26 | 23 | 4.84 | 5 | 1.05 | 0 | | 0 | |
| | | 2009 | 74 | 696 | 666 | 20 | 458 | 34 | 27 | 23 | 102 | 15.3 | 2 | 0.3 | 0 | | 0 | |
| | 2100 | 2003 | 86 | 784 | 784 | 86 | 480 | 21 | 105 | 23 | 16 | 2.04 | 53 | 6.76 | 0 | | 0 | |
| | | 2004 | 13 | 798 | 793 | 83 | 526 | 22 | 44 | 68 | 7 | 0.88 | 43 | 5.42 | 0 | | 0 | |
| | | 2005 | 19 | 698 | 692 | 253 | 237 | 39 | 52 | 21 | 40 | 5.78 | 51 | 7.37 | 0 | | 0 | |
| | | 2006 | 2 | 579 | 574 | 106 | 264 | 38 | 27 | 60 | 36 | 6.27 | 43 | 7.49 | 0 | | 0 | |
| | | 2008 | 47 | 494 | 491 | 110 | 216 | 19 | 21 | 46 | 35 | 7.13 | 44 | 8.95 | 0 | | 0 | |
| | 2101 | 2003 | 85 | 789 | 789 | 305 | 466 | 11 | 5 | 2 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 18 | 700 | 695 | 246 | 358 | 41 | 12 | 24 | 13 | 1.87 | 1 | 0.14 | 0 | | 0 | |
| | | 2008 | 48 | 489 | 485 | 167 | 247 | 18 | 6 | 41 | 6 | 1.24 | 0 | | 0 | | 0 | |
| | 2102 | 2005 | 21 | 695 | 593 | 114 | 303 | 29 | 4 | 79 | 62 | 10.4 | 2 | 0.34 | 0 | | 0 | |
| | | 2007 | 73 | 492 | 488 | 177 | 224 | 67 | 3 | 11 | 7 | 1.43 | 0 | | 0 | | 0 | |
| | | 2008 | 49 | 500 | 496 | 241 | 166 | 41 | 7 | 39 | 2 | 0.4 | 0 | | 0 | | 0 | |
| | 2103 | 2003 | 80 | 792 | 792 | 361 | 353 | 11 | 63 | 2 | 2 | 0.25 | 0 | | 0 | | 0 | |
| | | 2005 | 22 | 702 | 698 | 59 | 361 | 8 | 6 | 260 | 4 | 0.57 | 0 | | 0 | | 0 | |
| | | 2006 | 7 | 592 | 583 | 30 | 378 | 14 | 14 | 97 | 52 | 8.92 | 0 | | 0 | | 0 | |
| | | 2007 | 74 | 488 | 483 | 109 | 318 | 14 | 11 | 28 | 3 | 0.62 | 0 | | 0 | | 0 | |
| | | 2008 | 13 | 491 | 491 | 205 | 211 | 10 | 11 | 25 | 29 | 5.91 | 0 | | 0 | | 0 | |
| | 2104 | 2003 | 75 | 791 | 791 | 367 | 339 | 9 | 70 | 6 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 1 | 798 | 795 | 233 | 357 | 43 | 104 | 58 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 27 | 696 | 694 | 5 | 381 | 17 | 25 | 267 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | | 2008 | 10 | 499 | 497 | 312 | 88 | 9 | 45 | 43 | 0 | | 0 | | 0 | | 0 | |
| | 2105 | 2003 | 10 | 793 | 793 | 7 | 587 | 195 | 1 | 0 | 3 | 0.38 | 0 | | 0 | | 0 | |

| Area (5C/D) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2105** | 2005 | 26 | 698 | 694 | 61 | 489 | 128 | 1 | 10 | 0 | | 0 | | 5 | 0.72 | 0 | |
| | | 2007 | 5 | 493 | 486 | 10 | 384 | 72 | 1 | 18 | 0 | | 0 | | 1 | 0.21 | 0 | |
| | | 2008 | 9 | 492 | 491 | 37 | 343 | 111 | 0 | 0 | 0 | | 0 | | 0 | | 0 | |
| | **2106** | 2003 | 12 | 792 | 792 | 348 | 327 | 30 | 56 | 11 | 13 | 1.64 | 7 | 0.88 | 0 | | 0 | |
| | | 2008 | 18 | 497 | 490 | 175 | 209 | 21 | 65 | 16 | 3 | 0.61 | 1 | 0.2 | 0 | | 0 | |
| | **2107** | 2004 | 31 | 798 | 796 | 113 | 545 | 37 | 92 | 4 | 5 | 0.63 | 0 | | 0 | | 0 | |
| | | 2005 | 10 | 699 | 687 | 52 | 376 | 33 | 75 | 153 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | | 2008 | 19 | 500 | 499 | 30 | 249 | 17 | 174 | 24 | 5 | 1 | 0 | | 0 | | 0 | |
| | **2108** | 2003 | 84 | 801 | 801 | 341 | 326 | 57 | 38 | 8 | 29 | 3.62 | 2 | 0.25 | 0 | | 0 | |
| | | 2004 | 15 | 805 | 803 | 62 | 445 | 44 | 59 | 67 | 98 | 12.2 | 28 | 3.49 | 0 | | 0 | |
| | | 2005 | 20 | 700 | 697 | 55 | 358 | 58 | 105 | 33 | 85 | 12.2 | 4 | 0.57 | 0 | | 0 | |
| | | 2006 | 1 | 591 | 577 | 41 | 271 | 45 | 63 | 103 | 55 | 9.53 | 0 | | 0 | | 0 | |
| | | 2007 | 69 | 489 | 478 | 20 | 225 | 46 | 169 | 17 | 2 | 0.42 | 0 | | 0 | | 0 | |
| | | 2008 | 50 | 495 | 491 | 25 | 303 | 21 | 73 | 64 | 6 | 1.22 | 0 | | 0 | | 0 | |
| | | 2009 | 100 | 693 | 691 | 94 | 268 | 60 | 164 | 93 | 12 | 1.74 | 2 | 0.29 | 0 | | 0 | |
| | **2109** | 2003 | 82 | 785 | 785 | 214 | 479 | 19 | 23 | 16 | 33 | 4.2 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 7 | 798 | 797 | 33 | 589 | 48 | 33 | 67 | 27 | 3.39 | 0 | | 0 | | 0 | |
| | | 2005 | 13 | 697 | 690 | 18 | 439 | 31 | 10 | 179 | 15 | 2.17 | 0 | | 0 | | 0 | |
| | | 2006 | 5 | 577 | 566 | 13 | 400 | 23 | 30 | 51 | 50 | 8.83 | 0 | | 0 | | 0 | |
| | | 2007 | 72 | 493 | 488 | 77 | 271 | 33 | 49 | 43 | 15 | 3.07 | 0 | | 0 | | 0 | |
| | | 2008 | 54 | 495 | 490 | 40 | 322 | 11 | 32 | 70 | 15 | 3.06 | 0 | | 0 | | 0 | |
| | | 2009 | 101 | 707 | 702 | 65 | 421 | 25 | 39 | 125 | 27 | 3.85 | 0 | | 0 | | 0 | |
| | **2110** | 2003 | 81 | 785 | 785 | 19 | 486 | 7 | 46 | 2 | 225 | 28.6 | 0 | | 0 | | 0 | |
| | | 2004 | 6 | 792 | 792 | 253 | 343 | 31 | 76 | 22 | 67 | 8.46 | 0 | | 0 | | 0 | |
| | | 2005 | 12 | 697 | 692 | 50 | 408 | 23 | 60 | 63 | 89 | 12.8 | 0 | | 0 | | 0 | |
| | | 2006 | 6 | 598 | 589 | 7 | 364 | 32 | 45 | 134 | 9 | 1.53 | 0 | | 0 | | 0 | |
| | | 2007 | 75 | 497 | 476 | 5 | 336 | 15 | 15 | 22 | 84 | 17.6 | 0 | | 0 | | 0 | |
| | | 2008 | 53 | 490 | 487 | 9 | 370 | 12 | 32 | 14 | 50 | 10.2 | 0 | | 0 | | 0 | |
| | | 2009 | 94 | 695 | 686 | 2 | 417 | 9 | 36 | 63 | 160 | 23.3 | 0 | | 0 | | 0 | |
| | **2111** | 2003 | 74 | 794 | 794 | 252 | 423 | 30 | 45 | 11 | 33 | 4.16 | 0 | | 0 | | 0 | |
| | | 2004 | 5 | 794 | 793 | 110 | 434 | 39 | 36 | 127 | 47 | 5.93 | 0 | | 0 | | 0 | |
| | | 2005 | 16 | 700 | 695 | 32 | 296 | 33 | 18 | 309 | 7 | 1.01 | 0 | | 0 | | 0 | |
| | | 2006 | 32 | 586 | 581 | 22 | 340 | 7 | 13 | 190 | 9 | 1.55 | 0 | | 0 | | 0 | |
| | | 2007 | 76 | 490 | 489 | 130 | 213 | 23 | 25 | 78 | 20 | 4.09 | 0 | | 0 | | 0 | |
| | | 2008 | 58 | 497 | 495 | 294 | 125 | 13 | 37 | 20 | 6 | 1.21 | 0 | | 0 | | 0 | |
| | | 2009 | 93 | 698 | 685 | 25 | 394 | 25 | 24 | 193 | 24 | 3.5 | 0 | | 0 | | 0 | |
| | **2112** | 2003 | 73 | 790 | 790 | 42 | 620 | 101 | 15 | 0 | 9 | 1.14 | 0 | | 3 | 0.38 | 0 | |
| | | 2004 | 3 | 801 | 797 | 0 | 594 | 161 | 17 | 1 | 8 | 1 | 0 | | 16 | 2.01 | 0 | |
| | | 2005 | 8 | 700 | 696 | 7 | 447 | 119 | 48 | 43 | 5 | 0.72 | 0 | | 29 | 4.17 | 0 | |
| | | 2006 | 31 | 590 | 587 | 23 | 396 | 146 | 6 | 7 | 0 | | 0 | | 10 | 1.7 | 0 | |
| | | 2007 | 79 | 491 | 484 | 5 | 363 | 90 | 12 | 10 | 3 | 0.62 | 0 | | 1 | 0.21 | 0 | |
| | | 2008 | 61 | 490 | 488 | 10 | 396 | 73 | 2 | 0 | 6 | 1.23 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 102 | 692 | 676 | 16 | 544 | 90 | 11 | 10 | 4 | 0.59 | 0 | | 1 | 0.15 | 0 | |
| | **2113** | 2003 | 18 | 775 | 774 | 362 | 312 | 21 | 64 | 9 | 0 | | 6 | 0.78 | 0 | | 0 | |
| | | 2004 | 30 | 798 | 798 | 81 | 542 | 23 | 104 | 6 | 7 | 0.88 | 35 | 4.39 | 0 | | 0 | |
| | | 2005 | 9 | 698 | 688 | 13 | 362 | 4 | 51 | 257 | 0 | | 1 | 0.15 | 0 | | 0 | |
| | | 2006 | 37 | 590 | 589 | 320 | 173 | 4 | 14 | 67 | 7 | 1.19 | 4 | 0.68 | 0 | | 0 | |
| | | 2007 | 83 | 496 | 496 | 9 | 265 | 10 | 25 | 184 | 0 | | 3 | 0.6 | 0 | | 0 | |
| | | 2009 | 103 | 692 | 691 | 233 | 219 | 7 | 29 | 196 | 4 | 0.58 | 3 | 0.43 | 0 | | 0 | |
| | **2114** | 2003 | 17 | 787 | 787 | 367 | 323 | 16 | 72 | 9 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 29 | 799 | 798 | 119 | 549 | 27 | 99 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 38 | 696 | 694 | 321 | 223 | 15 | 71 | 64 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 36 | 596 | 596 | 49 | 343 | 5 | 29 | 170 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 82 | 498 | 494 | 10 | 310 | 3 | 55 | 117 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 20 | 492 | 482 | 216 | 193 | 4 | 45 | 24 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 113 | 696 | 690 | 111 | 352 | 11 | 30 | 186 | 0 | | 0 | | 0 | | 0 | |
| | **2115** | 2003 | 83 | 786 | 786 | 262 | 436 | 20 | 31 | 14 | 0 | | 7 | 0.89 | 0 | | 16 | 2.04 |
| | | 2004 | 16 | 804 | 803 | 44 | 586 | 6 | 29 | 106 | 0 | | 17 | 2.12 | 0 | | 15 | 1.87 |
| | | 2005 | 14 | 700 | 690 | 151 | 366 | 6 | 17 | 144 | 0 | | 0 | | 0 | | 6 | 0.87 |
| | | 2006 | 25 | 588 | 583 | 184 | 174 | 11 | 76 | 120 | 0 | | 9 | 1.54 | 0 | | 9 | 1.54 |
| | | 2007 | 3 | 490 | 479 | 130 | 224 | 10 | 76 | 37 | 0 | | 0 | | 0 | | 1 | 0.21 |
| | | 2008 | 51 | 499 | 491 | 42 | 302 | 3 | 30 | 113 | 0 | | 0 | | 0 | | 1 | 0.2 |
| | | 2009 | 99 | 697 | 690 | 106 | 318 | 17 | 86 | 137 | 0 | | 16 | 2.32 | 0 | | 10 | 1.45 |
| | **2116** | 2003 | 32 | 795 | 795 | 44 | 501 | 27 | 100 | 79 | 17 | 2.14 | 27 | 3.4 | 0 | | 0 | |
| | | 2004 | 17 | 798 | 797 | 153 | 389 | 104 | 68 | 47 | 16 | 2.01 | 20 | 2.51 | 0 | | 0 | |
| | | 2005 | 17 | 696 | 693 | 36 | 378 | 34 | 48 | 157 | 22 | 3.17 | 22 | 3.17 | 0 | | 0 | |
| | | 2006 | 26 | 595 | 590 | 3 | 338 | 22 | 74 | 139 | 6 | 1.02 | 8 | 1.36 | 0 | | 0 | |

| Area (5C/D) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2116 | 2007 | 2 | 491 | 486 | 0 | 291 | 11 | 18 | 159 | 4 | 0.82 | 4 | 0.82 | 0 | | 0 | |
| | | 2008 | 52 | 495 | 494 | 17 | 263 | 3 | 74 | 113 | 9 | 1.82 | 16 | 3.24 | 0 | | 0 | |
| | | 2009 | 98 | 696 | 685 | 46 | 321 | 60 | 67 | 156 | 24 | 3.5 | 11 | 1.61 | 0 | | 0 | |
| | 2117 | 2003 | 33 | 792 | 792 | 270 | 451 | 23 | 24 | 14 | 10 | 1.26 | 0 | | 0 | | 0 | |
| | | 2004 | 4 | 802 | 799 | 239 | 403 | 46 | 34 | 13 | 64 | 8.01 | 0 | | 0 | | 0 | |
| | | 2005 | 15 | 703 | 696 | 187 | 299 | 41 | 13 | 130 | 25 | 3.59 | 0 | | 1 | 0.14 | 0 | |
| | | 2006 | 27 | 588 | 579 | 25 | 315 | 67 | 14 | 119 | 41 | 7.08 | 0 | | 0 | | 0 | |
| | | 2007 | 77 | 491 | 484 | 15 | 341 | 32 | 43 | 35 | 19 | 3.93 | 0 | | 0 | | 0 | |
| | | 2008 | 57 | 499 | 497 | 183 | 211 | 27 | 40 | 5 | 30 | 6.04 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 95 | 693 | 687 | 62 | 383 | 44 | 50 | 95 | 53 | 7.71 | 0 | | 0 | | 0 | |
| | 2118 | 2003 | 72 | 800 | 800 | 262 | 456 | 54 | 18 | 4 | 6 | 0.75 | 0 | | 0 | | 0 | |
| | | 2004 | 25 | 799 | 796 | 90 | 576 | 62 | 30 | 13 | 23 | 2.89 | 0 | | 2 | 0.25 | 0 | |
| | | 2005 | 7 | 697 | 690 | 24 | 414 | 44 | 16 | 169 | 18 | 2.61 | 0 | | 6 | 0.87 | 0 | |
| | | 2006 | 30 | 593 | 589 | 16 | 407 | 74 | 18 | 68 | 10 | 1.7 | 0 | | 0 | | 0 | |
| | | 2007 | 78 | 498 | 488 | 63 | 287 | 53 | 38 | 39 | 8 | 1.64 | 0 | | 0 | | 0 | |
| | | 2008 | 60 | 504 | 502 | 281 | 149 | 38 | 18 | 8 | 6 | 1.2 | 0 | | 2 | 0.4 | 0 | |
| | | 2009 | 105 | 697 | 679 | 138 | 369 | 54 | 44 | 64 | 10 | 1.47 | 0 | | 0 | | 0 | |
| | 2119 | 2003 | 26 | 790 | 790 | 213 | 396 | 11 | 82 | 28 | 0 | | 60 | 7.59 | 0 | | 0 | |
| | | 2004 | 26 | 797 | 795 | 114 | 495 | 24 | 110 | 29 | 0 | | 23 | 2.89 | 0 | | 0 | |
| | | 2005 | 40 | 699 | 693 | 66 | 370 | 19 | 98 | 74 | 0 | | 63 | 9.09 | 0 | | 3 | 0.43 |
| | | 2006 | 39 | 595 | 593 | 15 | 286 | 15 | 50 | 164 | 0 | | 62 | 10.4 | 0 | | 1 | 0.17 |
| | | 2007 | 33 | 501 | 500 | 7 | 310 | 9 | 21 | 137 | 0 | | 17 | 3.4 | 0 | | 0 | |
| | | 2008 | 62 | 495 | 491 | 195 | 208 | 7 | 45 | 12 | 0 | | 24 | 4.89 | 0 | | 0 | |
| | | 2009 | 104 | 691 | 686 | 14 | 294 | 19 | 64 | 235 | 0 | | 59 | 8.6 | 0 | | 1 | 0.15 |
| | 2120 | 2003 | 25 | 796 | 794 | 303 | 387 | 4 | 57 | 39 | 0 | | 2 | 0.25 | 0 | | 2 | 0.25 |
| | | 2004 | 28 | 800 | 798 | 200 | 476 | 7 | 73 | 11 | 0 | | 26 | 3.26 | 0 | | 5 | 0.63 |
| | | 2005 | 39 | 692 | 691 | 195 | 312 | 2 | 84 | 88 | 1 | 0.14 | 4 | 0.58 | 0 | | 5 | 0.72 |
| | | 2006 | 38 | 589 | 588 | 39 | 333 | 6 | 14 | 194 | 0 | | 1 | 0.17 | 0 | | 2 | 0.34 |
| | | 2007 | 32 | 495 | 490 | 2 | 310 | 3 | 21 | 155 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 63 | 490 | 487 | 369 | 86 | 4 | 18 | 7 | 0 | | 1 | 0.21 | 0 | | 2 | 0.41 |
| | | 2009 | 112 | 699 | 697 | 300 | 186 | 6 | 49 | 125 | 0 | | 23 | 3.3 | 0 | | 8 | 1.15 |
| | 2121 | 2003 | 31 | 791 | 791 | 70 | 572 | 22 | 20 | 78 | 25 | 3.16 | 4 | 0.51 | 0 | | 0 | |
| | | 2004 | 18 | 799 | 795 | 22 | 490 | 72 | 116 | 68 | 16 | 2.01 | 11 | 1.38 | 0 | | 0 | |
| | | 2005 | 6 | 701 | 696 | 2 | 495 | 30 | 10 | 160 | 4 | 0.57 | 0 | | 0 | | 0 | |
| | | 2006 | 24 | 595 | 591 | 42 | 290 | 54 | 15 | 142 | 44 | 7.45 | 4 | 0.68 | 0 | | 0 | |
| | | 2007 | 1 | 488 | 482 | 0 | 313 | 1 | 8 | 154 | 7 | 1.45 | 1 | 0.21 | 0 | | 0 | |
| | | 2008 | 55 | 493 | 492 | 71 | 260 | 15 | 43 | 72 | 29 | 5.89 | 2 | 0.41 | 0 | | 0 | |
| | | 2009 | 97 | 697 | 695 | 26 | 482 | 31 | 30 | 111 | 14 | 2.01 | 3 | 0.43 | 0 | | 0 | |
| | 2122 | 2003 | 30 | 797 | 796 | 58 | 628 | 68 | 15 | 9 | 18 | 2.26 | 0 | | 0 | | 0 | |
| | | 2004 | 24 | 794 | 787 | 3 | 645 | 91 | 9 | 31 | 8 | 1.02 | 0 | | 0 | | 0 | |
| | | 2005 | 5 | 699 | 697 | 9 | 489 | 64 | 8 | 126 | 1 | 0.14 | 0 | | 0 | | 0 | |
| | | 2006 | 28 | 593 | 592 | 25 | 352 | 115 | 15 | 78 | 5 | 0.84 | 0 | | 5 | 0.84 | 0 | |
| | | 2007 | 36 | 495 | 494 | 13 | 330 | 73 | 25 | 50 | 3 | 0.61 | 0 | | 0 | | 0 | |
| | | 2008 | 56 | 493 | 491 | 76 | 294 | 68 | 10 | 1 | 36 | 7.33 | 0 | | 6 | 1.22 | 0 | |
| | | 2009 | 96 | 700 | 693 | 47 | 481 | 85 | 17 | 44 | 10 | 1.44 | 0 | | 9 | 1.3 | 0 | |
| | 2123 | 2003 | 29 | 793 | 793 | 245 | 466 | 40 | 7 | 25 | 10 | 1.26 | 0 | | 0 | | 0 | |
| | | 2004 | 23 | 790 | 790 | 58 | 521 | 57 | 12 | 36 | 106 | 13.4 | 0 | | 0 | | 0 | |
| | | 2005 | 42 | 702 | 696 | 332 | 196 | 57 | 14 | 72 | 25 | 3.59 | 0 | | 0 | | 0 | |
| | | 2006 | 29 | 589 | 589 | 33 | 333 | 56 | 10 | 137 | 22 | 3.74 | 0 | | 0 | | 0 | |
| | | 2007 | 35 | 499 | 480 | 27 | 313 | 21 | 16 | 57 | 46 | 9.58 | 0 | | 0 | | 0 | |
| | | 2008 | 59 | 493 | 491 | 269 | 165 | 21 | 9 | 9 | 17 | 3.46 | 0 | | 1 | 0.2 | 0 | |
| | | 2009 | 110 | 690 | 685 | 21 | 453 | 39 | 26 | 74 | 72 | 10.5 | 0 | | 0 | | 0 | |
| | 2124 | 2003 | 27 | 797 | 796 | 433 | 238 | 5 | 83 | 20 | 1 | 0.13 | 16 | 2.01 | 0 | | 0 | |
| | | 2004 | 27 | 800 | 798 | 61 | 480 | 26 | 113 | 63 | 0 | | 55 | 6.89 | 0 | | 0 | |
| | | 2005 | 41 | 700 | 696 | 410 | 147 | 19 | 56 | 40 | 0 | | 24 | 3.45 | 0 | | 0 | |
| | | 2006 | 40 | 590 | 584 | 71 | 280 | 10 | 53 | 107 | 1 | 0.17 | 62 | 10.6 | 0 | | 0 | |
| | | 2007 | 34 | 497 | 492 | 8 | 295 | 3 | 36 | 131 | 0 | | 19 | 3.86 | 0 | | 0 | |
| | | 2008 | 67 | 496 | 492 | 344 | 71 | 20 | 22 | 12 | 1 | 0.2 | 22 | 4.47 | 0 | | 0 | |
| | | 2009 | 111 | 693 | 690 | 118 | 276 | 18 | 49 | 184 | 0 | | 45 | 6.52 | 0 | | 0 | |
| | 2125 | 2003 | 34 | 792 | 792 | 152 | 502 | 73 | 5 | 11 | 49 | 6.19 | 0 | | 0 | | 0 | |
| | | 2004 | 19 | 798 | 798 | 69 | 623 | 80 | 4 | 2 | 19 | 2.38 | 0 | | 1 | 0.13 | 0 | |
| | | 2005 | 4 | 697 | 697 | 58 | 455 | 68 | 6 | 50 | 58 | 8.32 | 0 | | 2 | 0.29 | 0 | |
| | | 2006 | 42 | 587 | 584 | 69 | 378 | 108 | 5 | 4 | 18 | 3.08 | 0 | | 2 | 0.34 | 0 | |
| | | 2007 | 37 | 491 | 489 | 0 | 353 | 64 | 8 | 58 | 8 | 1.64 | 0 | | 0 | | 0 | |
| | | 2008 | 22 | 489 | 482 | 148 | 255 | 38 | 4 | 9 | 27 | 5.6 | 0 | | 1 | 0.21 | 0 | |
| | | 2009 | 108 | 687 | 676 | 5 | 437 | 115 | 16 | 87 | 14 | 2.07 | 0 | | 4 | 0.59 | 0 | |
| | 2126 | 2003 | 28 | 797 | 797 | 331 | 398 | 37 | 4 | 13 | 14 | 1.76 | 0 | | 0 | | 0 | |

| Area (5C/D) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2126 | 2004 | 22 | 801 | 801 | 37 | 563 | 77 | 26 | 45 | 53 | 6.62 | 0 | | 0 | | 0 | |
| | | 2005 | 43 | 701 | 701 | 270 | 215 | 60 | 14 | 125 | 17 | 2.43 | 0 | | 0 | | 0 | |
| | | 2006 | 41 | 593 | 590 | 151 | 269 | 68 | 13 | 45 | 44 | 7.46 | 0 | | 0 | | 0 | |
| | | 2007 | 38 | 496 | 493 | 2 | 356 | 14 | 15 | 96 | 9 | 1.83 | 0 | | 0 | | 0 | |
| | | 2008 | 21 | 496 | 494 | 295 | 132 | 25 | 5 | 26 | 11 | 2.23 | 0 | | 0 | | 0 | |
| | | 2009 | 109 | 701 | 696 | 91 | 462 | 20 | 17 | 66 | 40 | 5.75 | 0 | | 0 | | 0 | |
| | 2127 | 2003 | 36 | 785 | 785 | 81 | 559 | 33 | 20 | 36 | 43 | 5.48 | 11 | 1.4 | 0 | | 2 | 0.25 |
| | | 2004 | 21 | 804 | 803 | 38 | 662 | 62 | 7 | 26 | 8 | 1 | 0 | | 0 | | 0 | |
| | | 2005 | 3 | 700 | 694 | 90 | 407 | 94 | 13 | 34 | 57 | 8.21 | 0 | | 0 | | 0 | |
| | | 2006 | 23 | 594 | 587 | 6 | 339 | 78 | 29 | 121 | 18 | 3.07 | 0 | | 0 | | 0 | |
| | | 2007 | 20 | 494 | 479 | 2 | 328 | 27 | 24 | 70 | 29 | 6.05 | 0 | | 0 | | 0 | |
| | | 2008 | 24 | 499 | 497 | 40 | 330 | 63 | 30 | 10 | 23 | 4.63 | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 107 | 701 | 689 | 68 | 394 | 94 | 24 | 29 | 80 | 11.6 | 0 | | 0 | | 0 | |
| | 2128 | 2003 | 35 | 798 | 798 | 74 | 528 | 40 | 26 | 71 | 53 | 6.64 | 6 | 0.75 | 0 | | 0 | |
| | | 2004 | 20 | 796 | 794 | 15 | 619 | 33 | 21 | 72 | 33 | 4.16 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 2 | 691 | 690 | 21 | 460 | 46 | 17 | 135 | 11 | 1.59 | 1 | 0.14 | 0 | | 0 | |
| | | 2006 | 22 | 592 | 536 | 4 | 342 | 11 | 11 | 151 | 17 | 3.17 | 0 | | 0 | | 0 | |
| | | 2007 | 19 | 493 | 492 | 0 | 325 | 2 | 1 | 156 | 8 | 1.63 | 0 | | 0 | | 0 | |
| | | 2008 | 23 | 497 | 490 | 61 | 330 | 26 | 24 | 10 | 38 | 7.76 | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 106 | 699 | 681 | 132 | 296 | 46 | 25 | 118 | 64 | 9.4 | 2 | 0.29 | 0 | | 0 | |
| | 2129 | 2003 | 14 | 787 | 785 | 102 | 471 | 27 | 140 | 8 | 0 | | 24 | 3.06 | 0 | | 13 | 1.66 |
| | | 2004 | 2 | 799 | 585 | 83 | 298 | 13 | 105 | 83 | 0 | | 3 | 0.51 | 0 | | 0 | |
| | | 2005 | 34 | 697 | 692 | 100 | 391 | 20 | 95 | 72 | 0 | | 5 | 0.72 | 0 | | 10 | 1.45 |
| | | 2006 | 10 | 597 | 590 | 99 | 386 | 12 | 69 | 12 | 0 | | 6 | 1.02 | 0 | | 6 | 1.02 |
| | | 2007 | 30 | 497 | 481 | 13 | 314 | 2 | 26 | 108 | 0 | | 12 | 2.49 | 0 | | 8 | 1.66 |
| | | 2008 | 64 | 488 | 487 | 166 | 248 | 8 | 46 | 11 | 0 | | 4 | 0.82 | 0 | | 5 | 1.03 |
| | | 2009 | 51 | 702 | 701 | 224 | 270 | 21 | 68 | 95 | 0 | | 17 | 2.43 | 0 | | 6 | 0.86 |
| | 2130 | 2003 | 13 | 787 | 783 | 75 | 429 | 18 | 47 | 202 | 0 | | 5 | 0.64 | 0 | | 7 | 0.89 |
| | | 2004 | 1 | 804 | 801 | 32 | 340 | 4 | 7 | 413 | 0 | | 3 | 0.37 | 0 | | 2 | 0.25 |
| | | 2005 | 35 | 698 | 696 | 63 | 368 | 24 | 34 | 192 | 0 | | 8 | 1.15 | 0 | | 7 | 1.01 |
| | | 2006 | 11 | 596 | 592 | 150 | 301 | 23 | 16 | 88 | 1 | 0.17 | 9 | 1.52 | 0 | | 4 | 0.68 |
| | | 2007 | 31 | 488 | 483 | 2 | 251 | 5 | 6 | 212 | 0 | | 5 | 1.04 | 0 | | 2 | 0.41 |
| | | 2008 | 65 | 498 | 494 | 175 | 198 | 21 | 20 | 76 | 0 | | 3 | 0.61 | 0 | | 1 | 0.2 |
| | | 2009 | 50 | 700 | 695 | 221 | 240 | 35 | 32 | 167 | 0 | | 3 | 0.43 | 0 | | 0 | |
| | 2131 | 2003 | 24 | 791 | 789 | 30 | 626 | 27 | 100 | 6 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 4 | 800 | 796 | 46 | 260 | 10 | 56 | 424 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 32 | 693 | 692 | 42 | 447 | 18 | 55 | 132 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 12 | 595 | 589 | 143 | 320 | 19 | 82 | 25 | 0 | | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 29 | 494 | 489 | 0 | 309 | 2 | 50 | 127 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 68 | 492 | 488 | 126 | 266 | 20 | 54 | 22 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 53 | 699 | 699 | 3 | 313 | 7 | 14 | 362 | 0 | | 0 | | 0 | | 0 | |
| | 2132 | 2003 | 15 | 792 | 791 | 14 | 605 | 6 | 41 | 124 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 3 | 796 | 796 | 177 | 362 | 16 | 77 | 163 | 0 | | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 33 | 694 | 693 | 118 | 365 | 14 | 62 | 133 | 0 | | 0 | | 0 | | 2 | 0.29 |
| | | 2006 | 9 | 598 | 595 | 121 | 367 | 9 | 83 | 14 | 0 | | 0 | | 0 | | 1 | 0.17 |
| | | 2007 | 28 | 496 | 488 | 46 | 300 | 8 | 23 | 114 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 66 | 504 | 503 | 100 | 315 | 3 | 64 | 20 | 0 | | 0 | | 0 | | 1 | 0.2 |
| | | 2009 | 52 | 703 | 701 | 34 | 298 | 10 | 50 | 310 | 0 | | 1 | 0.14 | 0 | | 2 | 0.29 |
| | 2133 | 2003 | 22 | 790 | 789 | 374 | 300 | 25 | 56 | 14 | 0 | | 20 | 2.53 | 0 | | 0 | |
| | | 2004 | 6 | 789 | 788 | 173 | 278 | 3 | 36 | 291 | 0 | | 7 | 0.89 | 0 | | 0 | |
| | | 2005 | 30 | 693 | 690 | 52 | 414 | 17 | 55 | 150 | 0 | | 2 | 0.29 | 0 | | 0 | |
| | | 2006 | 14 | 583 | 583 | 71 | 385 | 9 | 14 | 95 | 0 | | 9 | 1.54 | 0 | | 0 | |
| | | 2007 | 26 | 491 | 491 | 0 | 351 | 1 | 9 | 130 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 70 | 485 | 482 | 295 | 124 | 9 | 34 | 17 | 0 | | 3 | 0.62 | 0 | | 0 | |
| | | 2009 | 55 | 702 | 702 | 53 | 385 | 4 | 29 | 231 | 0 | | 0 | | 0 | | 0 | |
| | 2134 | 2003 | 23 | 790 | 789 | 1 | 537 | 5 | 15 | 231 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 5 | 796 | 795 | 98 | 274 | 17 | 34 | 372 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 31 | 699 | 698 | 21 | 403 | 25 | 43 | 206 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 13 | 599 | 593 | 53 | 339 | 38 | 31 | 132 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 27 | 496 | 492 | 5 | 257 | 13 | 12 | 205 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 69 | 499 | 499 | 150 | 176 | 62 | 15 | 97 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 54 | 706 | 706 | 19 | 351 | 20 | 36 | 283 | 0 | | 0 | | 0 | | 0 | |
| | 2135 | 2003 | 20 | 788 | 785 | 20 | 634 | 42 | 15 | 8 | 66 | 8.41 | 0 | | 0 | | 0 | |
| | | 2004 | 41 | 795 | 794 | 51 | 527 | 86 | 18 | 35 | 77 | 9.7 | 0 | | 0 | | 0 | |
| | | 2005 | 28 | 696 | 695 | 30 | 496 | 101 | 4 | 10 | 55 | 7.91 | 0 | | 0 | | 0 | |
| | | 2006 | 17 | 598 | 591 | 20 | 472 | 41 | 5 | 20 | 33 | 5.58 | 0 | | 0 | | 0 | |
| | | 2007 | 84 | 496 | 491 | 56 | 349 | 24 | 5 | 14 | 42 | 8.55 | 0 | | 1 | 0.2 | 0 | |

| Area (5C/D) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2135 | 2008 | 72 | 488 | 486 | 93 | 324 | 28 | 2 | 6 | 33 | 6.79 | 0 | | 0 | | 0 | |
| | | 2009 | 57 | 697 | 696 | 13 | 458 | 103 | 22 | 56 | 46 | 6.61 | 0 | | 0 | | 0 | |
| | 2136 | 2003 | 21 | 795 | 795 | 188 | 478 | 44 | 48 | 37 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 40 | 799 | 798 | 40 | 449 | 32 | 27 | 250 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 29 | 699 | 699 | 0 | 496 | 29 | 17 | 161 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 18 | 595 | 594 | 9 | 464 | 19 | 49 | 52 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 25 | 481 | 481 | 0 | 323 | 1 | 5 | 152 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 71 | 489 | 484 | 261 | 148 | 13 | 32 | 30 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 56 | 705 | 705 | 2 | 457 | 6 | 16 | 225 | 0 | | 0 | | 0 | | 0 | |
| | 2137 | 2003 | 19 | 786 | 781 | 37 | 576 | 26 | 32 | 88 | 16 | 2.05 | 6 | 0.77 | 0 | | 0 | |
| | | 2004 | 42 | 784 | 781 | 42 | 522 | 19 | 51 | 114 | 9 | 1.15 | 24 | 3.07 | 0 | | 0 | |
| | | 2005 | 27 | 700 | 695 | 64 | 422 | 42 | 48 | 80 | 23 | 3.31 | 16 | 2.3 | 0 | | 0 | |
| | | 2006 | 16 | 601 | 592 | 15 | 443 | 33 | 15 | 56 | 24 | 4.05 | 5 | 0.84 | 0 | | 1 | 0.17 |
| | | 2007 | 85 | 491 | 484 | 59 | 330 | 16 | 15 | 38 | 19 | 3.93 | 7 | 1.45 | 0 | | 0 | |
| | | 2008 | 73 | 495 | 484 | 129 | 250 | 9 | 27 | 32 | 36 | 7.44 | 3 | 0.62 | 0 | | 0 | |
| | | 2009 | 58 | 703 | 701 | 31 | 449 | 14 | 32 | 142 | 7 | 1 | 26 | 3.71 | 0 | | 0 | |
| | 2138 | 2003 | 63 | 798 | 798 | 145 | 550 | 30 | 0 | 56 | 16 | 2.01 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 39 | 795 | 793 | 41 | 487 | 40 | 11 | 198 | 15 | 1.89 | 1 | 0.13 | 0 | | 0 | |
| | | 2005 | 24 | 695 | 695 | 103 | 455 | 67 | 7 | 19 | 42 | 6.04 | 2 | 0.29 | 0 | | 0 | |
| | | 2006 | 21 | 600 | 594 | 18 | 447 | 35 | 13 | 67 | 17 | 2.86 | 2 | 0.34 | 0 | | 0 | |
| | | 2007 | 68 | 492 | 489 | 6 | 367 | 18 | 12 | 79 | 8 | 1.64 | 0 | | 0 | | 0 | |
| | | 2008 | 83 | 493 | 490 | 343 | 83 | 14 | 6 | 25 | 19 | 3.88 | 0 | | 0 | | 0 | |
| | | 2009 | 61 | 698 | 695 | 4 | 504 | 25 | 14 | 143 | 6 | 0.86 | 0 | | 0 | | 0 | |
| | 2139 | 2003 | 62 | 793 | 793 | 6 | 552 | 39 | 26 | 170 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 38 | 793 | 791 | 2 | 547 | 3 | 25 | 214 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 36 | 699 | 698 | 36 | 441 | 57 | 31 | 132 | 0 | | 2 | 0.29 | 0 | | 0 | |
| | | 2006 | 20 | 597 | 594 | 8 | 469 | 25 | 14 | 78 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 67 | 492 | 491 | 1 | 357 | 7 | 9 | 117 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 81 | 491 | 491 | 168 | 203 | 33 | 15 | 71 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 62 | 703 | 703 | 1 | 424 | 4 | 15 | 260 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | 2140 | 2003 | 65 | 793 | 793 | 5 | 634 | 21 | 78 | 50 | 0 | | 1 | 0.13 | 0 | | 4 | 0.5 |
| | | 2004 | 43 | 790 | 789 | 84 | 487 | 34 | 163 | 9 | 0 | | 5 | 0.63 | 0 | | 7 | 0.89 |
| | | 2005 | 26 | 694 | 690 | 62 | 457 | 55 | 70 | 44 | 0 | | 0 | | 0 | | 3 | 0.43 |
| | | 2006 | 15 | 596 | 583 | 84 | 384 | 47 | 56 | 21 | 0 | | 4 | 0.69 | 0 | | 7 | 1.2 |
| | | 2007 | 86 | 488 | 487 | 34 | 348 | 19 | 62 | 23 | 0 | | 1 | 0.21 | 0 | | 0 | |
| | | 2008 | 74 | 495 | 490 | 19 | 344 | 13 | 95 | 14 | 0 | | 4 | 0.82 | 0 | | 1 | 0.2 |
| | | 2009 | 59 | 703 | 702 | 190 | 391 | 63 | 32 | 22 | 0 | | 1 | 0.14 | 0 | | 3 | 0.43 |
| | 2141 | 2003 | 64 | 792 | 792 | 19 | 586 | 52 | 102 | 12 | 0 | | 10 | 1.26 | 0 | | 11 | 1.39 |
| | | 2004 | 44 | 790 | 787 | 101 | 421 | 65 | 137 | 2 | 0 | | 39 | 4.96 | 0 | | 22 | 2.8 |
| | | 2005 | 25 | 695 | 694 | 199 | 343 | 37 | 34 | 52 | 0 | | 18 | 2.59 | 0 | | 11 | 1.59 |
| | | 2006 | 22 | 593 | 584 | 65 | 390 | 37 | 34 | 8 | 0 | | 31 | 5.31 | 0 | | 20 | 3.42 |
| | | 2007 | 65 | 475 | 465 | 86 | 265 | 17 | 43 | 3 | 0 | | 36 | 7.74 | 0 | | 15 | 3.23 |
| | | 2008 | 84 | 492 | 491 | 61 | 253 | 60 | 78 | 8 | 0 | | 21 | 4.28 | 0 | | 10 | 2.04 |
| | | 2009 | 60 | 702 | 702 | 73 | 410 | 57 | 132 | 10 | 0 | | 17 | 2.42 | 0 | | 4 | 0.57 |
| | 2142 | 2003 | 61 | 787 | 786 | 62 | 554 | 33 | 18 | 110 | 8 | 1.02 | 1 | 0.13 | 0 | | 0 | |
| | | 2004 | 37 | 799 | 795 | 258 | 321 | 54 | 32 | 128 | 2 | 0.25 | 0 | | 0 | | 0 | |
| | | 2005 | 37 | 697 | 696 | 64 | 408 | 37 | 46 | 136 | 5 | 0.72 | 0 | | 0 | | 0 | |
| | | 2006 | 19 | 598 | 594 | 31 | 424 | 19 | 43 | 59 | 18 | 3.03 | 0 | | 0 | | 0 | |
| | | 2007 | 66 | 491 | 490 | 58 | 313 | 31 | 19 | 65 | 2 | 0.41 | 1 | 0.2 | 0 | | 1 | 0.2 |
| | | 2008 | 82 | 492 | 490 | 289 | 120 | 11 | 35 | 34 | 0 | | 1 | 0.2 | 0 | | 0 | |
| | | 2009 | 63 | 703 | 703 | 104 | 380 | 19 | 75 | 125 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | 2145 | 2003 | 60 | 793 | 793 | 147 | 497 | 34 | 40 | 75 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 36 | 793 | 790 | 182 | 417 | 76 | 67 | 48 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 38 | 693 | 691 | 24 | 432 | 46 | 45 | 145 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 7 | 598 | 597 | 41 | 379 | 64 | 22 | 95 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 24 | 488 | 488 | 52 | 314 | 31 | 17 | 75 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 80 | 490 | 488 | 146 | 245 | 33 | 49 | 15 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 64 | 701 | 701 | 6 | 488 | 16 | 56 | 136 | 0 | | 0 | | 0 | | 0 | |
| | 2147 | 2003 | 59 | 789 | 770 | 25 | 623 | 28 | 54 | 40 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 34 | 790 | 788 | 120 | 464 | 114 | 70 | 19 | 0 | | 0 | | 0 | | 1 | 0.13 |
| | | 2005 | 39 | 694 | 694 | 72 | 487 | 38 | 34 | 63 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 8 | 598 | 597 | 18 | 344 | 76 | 25 | 135 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 23 | 487 | 483 | 28 | 363 | 25 | 26 | 38 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 85 | 489 | 488 | 150 | 260 | 33 | 30 | 15 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 66 | 702 | 700 | 54 | 443 | 17 | 30 | 157 | 0 | | 0 | | 0 | | 0 | |
| | 2148 | 2003 | 58 | 794 | 792 | 72 | 538 | 54 | 63 | 65 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 35 | 802 | 800 | 226 | 320 | 109 | 69 | 76 | 0 | | 0 | | 0 | | 0 | |

| Area (5C/D) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2148 | 2005 | 40 | 694 | 693 | 95 | 392 | 45 | 43 | 118 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 6 | 597 | 597 | 40 | 404 | 39 | 44 | 70 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 21 | 503 | 501 | 47 | 311 | 52 | 63 | 27 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 79 | 495 | 493 | 53 | 275 | 16 | 61 | 88 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 65 | 701 | 701 | 152 | 316 | 53 | 104 | 76 | 0 | | 0 | | 0 | | 0 | |
| | 2150 | 2003 | 57 | 790 | 788 | 32 | 570 | 121 | 34 | 29 | 2 | 0.25 | 0 | | 0 | | 0 | |
| | | 2004 | 33 | 794 | 788 | 154 | 329 | 151 | 130 | 24 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 41 | 698 | 694 | 41 | 428 | 70 | 67 | 89 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 5 | 598 | 596 | 42 | 299 | 127 | 98 | 35 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 22 | 490 | 489 | 31 | 320 | 69 | 58 | 12 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 86 | 499 | 496 | 48 | 269 | 53 | 112 | 16 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 67 | 705 | 705 | 62 | 426 | 72 | 108 | 39 | 0 | | 0 | | 0 | | 0 | |
| | 2152 | 2003 | 56 | 780 | 780 | 18 | 601 | 84 | 27 | 48 | 0 | | 1 | 0.13 | 0 | | 1 | 0.13 |
| | | 2004 | 7 | 802 | 798 | 102 | 496 | 53 | 31 | 114 | 0 | | 0 | | 0 | | 2 | 0.25 |
| | | 2005 | 44 | 693 | 693 | 99 | 470 | 67 | 20 | 43 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 23 | 594 | 588 | 94 | 375 | 50 | 10 | 57 | 0 | | 3 | 0.51 | 0 | | 1 | 0.17 |
| | | 2007 | 39 | 498 | 497 | 114 | 286 | 31 | 33 | 28 | 0 | | 0 | | 0 | | 6 | 1.21 |
| | | 2008 | 46 | 491 | 490 | 135 | 273 | 33 | 14 | 34 | 0 | | 0 | | 0 | | 1 | 0.2 |
| | | 2009 | 93 | 707 | 706 | 87 | 487 | 19 | 15 | 98 | 0 | | 0 | | 0 | | 0 | |
| | 2153 | 2003 | 51 | 796 | 795 | 2 | 608 | 55 | 121 | 9 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 32 | 782 | 781 | 65 | 465 | 80 | 138 | 33 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 16 | 696 | 694 | 4 | 606 | 9 | 56 | 21 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 41 | 591 | 581 | 2 | 452 | 34 | 27 | 75 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 57 | 498 | 493 | 2 | 400 | 10 | 11 | 74 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 40 | 492 | 489 | 1 | 353 | 14 | 111 | 12 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 84 | 703 | 703 | 11 | 359 | 67 | 194 | 72 | 0 | | 0 | | 0 | | 0 | |
| | 2154 | 2003 | 50 | 794 | 793 | 3 | 641 | 6 | 103 | 40 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 31 | 800 | 791 | 3 | 566 | 67 | 90 | 65 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 15 | 695 | 693 | 0 | 561 | 24 | 50 | 62 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 34 | 590 | 578 | 3 | 439 | 16 | 5 | 117 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 42 | 501 | 498 | 0 | 390 | 22 | 42 | 50 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 31 | 492 | 488 | 5 | 354 | 32 | 45 | 55 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 82 | 704 | 703 | 38 | 439 | 33 | 71 | 126 | 0 | | 0 | | 0 | | 0 | |
| | 2155 | 2003 | 49 | 793 | 792 | 3 | 637 | 47 | 87 | 18 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 19 | 795 | 792 | 7 | 588 | 67 | 49 | 81 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 12 | 696 | 693 | 28 | 497 | 93 | 60 | 18 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 33 | 597 | 596 | 25 | 352 | 112 | 54 | 45 | 0 | | 8 | 1.34 | 0 | | 4 | 0.67 |
| | | 2007 | 45 | 498 | 496 | 5 | 338 | 83 | 48 | 30 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 32 | 501 | 500 | 10 | 332 | 81 | 62 | 17 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 79 | 705 | 704 | 17 | 422 | 43 | 89 | 133 | 0 | | 0 | | 0 | | 0 | |
| | 2158 | 2003 | 55 | 778 | 777 | 54 | 555 | 91 | 31 | 32 | 0 | | 7 | 0.9 | 0 | | 7 | 0.9 |
| | | 2004 | 8 | 792 | 789 | 103 | 517 | 71 | 64 | 4 | 0 | | 5 | 0.63 | 0 | | 9 | 1.14 |
| | | 2005 | 43 | 695 | 693 | 151 | 384 | 60 | 43 | 45 | 0 | | 5 | 0.72 | 0 | | 5 | 0.72 |
| | | 2006 | 24 | 599 | 596 | 195 | 283 | 71 | 27 | 17 | 0 | | 2 | 0.34 | 0 | | 1 | 0.17 |
| | | 2007 | 40 | 493 | 491 | 80 | 335 | 30 | 27 | 12 | 0 | | 1 | 0.2 | 0 | | 7 | 1.43 |
| | | 2008 | 45 | 496 | 496 | 176 | 232 | 37 | 23 | 21 | 0 | | 3 | 0.6 | 0 | | 4 | 0.81 |
| | | 2009 | 91 | 702 | 701 | 282 | 295 | 37 | 28 | 38 | 1 | 0.14 | 10 | 1.43 | 1 | 0.14 | 9 | 1.28 |
| | 2159 | 2003 | 71 | 794 | 794 | 29 | 549 | 92 | 124 | 0 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 12 | 798 | 795 | 33 | 397 | 144 | 208 | 13 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 23 | 694 | 690 | 24 | 470 | 68 | 119 | 15 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 4 | 597 | 595 | 35 | 391 | 107 | 56 | 8 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 64 | 491 | 491 | 46 | 267 | 81 | 81 | 16 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 75 | 501 | 498 | 66 | 229 | 110 | 78 | 17 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 90 | 704 | 700 | 68 | 270 | 104 | 145 | 114 | 0 | | 0 | | 0 | | 0 | |
| | 2160 | 2003 | 66 | 790 | 790 | 10 | 626 | 108 | 33 | 3 | 10 | 1.27 | 0 | | 0 | | 0 | |
| | | 2004 | 13 | 800 | 799 | 13 | 646 | 80 | 16 | 41 | 3 | 0.38 | 0 | | 0 | | 0 | |
| | | 2005 | 20 | 698 | 696 | 1 | 533 | 141 | 5 | 4 | 13 | 1.87 | 0 | | 0 | | 0 | |
| | | 2006 | 1 | 601 | 601 | 7 | 474 | 84 | 10 | 16 | 11 | 1.83 | 0 | | 0 | | 0 | |
| | | 2007 | 63 | 495 | 492 | 0 | 388 | 62 | 6 | 25 | 12 | 2.44 | 0 | | 0 | | 0 | |
| | | 2008 | 76 | 479 | 474 | 4 | 295 | 52 | 39 | 16 | 68 | 14.3 | 0 | | 0 | | 0 | |
| | | 2009 | 89 | 705 | 703 | 16 | 389 | 82 | 110 | 52 | 54 | 7.68 | 0 | | 0 | | 0 | |
| | 2161 | 2003 | 67 | 794 | 794 | 15 | 615 | 118 | 36 | 6 | 4 | 0.5 | 0 | | 0 | | 0 | |
| | | 2004 | 14 | 793 | 793 | 16 | 652 | 38 | 34 | 53 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 18 | 698 | 698 | 11 | 552 | 70 | 24 | 27 | 14 | 2.01 | 0 | | 0 | | 0 | |
| | | 2006 | 43 | 596 | 593 | 1 | 435 | 66 | 25 | 41 | 5 | 0.84 | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 59 | 494 | 493 | 0 | 405 | 20 | 32 | 33 | 3 | 0.61 | 0 | | 0 | | 0 | |
| | | 2008 | 42 | 496 | 494 | 7 | 304 | 91 | 70 | 16 | 6 | 1.21 | 0 | | 0 | | 0 | |

| Area | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (5C/D) | | | | | | | | | | | | | | | | | | |
| | 2161 | 2009 | 85 | 704 | 701 | 111 | 321 | 120 | 80 | 60 | 10 | 1.43 | 0 | | 0 | | 0 | |
| | 2162 | 2003 | 52 | 794 | 793 | 2 | 636 | 128 | 14 | 3 | 9 | 1.13 | 0 | | 1 | 0.13 | 0 | |
| | | 2004 | 15 | 795 | 788 | 57 | 510 | 171 | 14 | 21 | 15 | 1.9 | 0 | | 0 | | 0 | |
| | | 2005 | 17 | 701 | 695 | 6 | 516 | 145 | 7 | 13 | 6 | 0.86 | 1 | 0.14 | 4 | 0.58 | 0 | |
| | | 2006 | 42 | 589 | 584 | 11 | 433 | 114 | 9 | 4 | 5 | 0.86 | 0 | | 8 | 1.37 | 0 | |
| | | 2007 | 58 | 494 | 492 | 1 | 407 | 55 | 4 | 19 | 1 | 0.2 | 0 | | 5 | 1.02 | 0 | |
| | | 2008 | 41 | 496 | 483 | 16 | 305 | 112 | 16 | 13 | 8 | 1.66 | 0 | | 13 | 2.69 | 0 | |
| | | 2009 | 83 | 702 | 700 | 110 | 345 | 144 | 38 | 27 | 28 | 4 | 0 | | 8 | 1.14 | 0 | |
| | 2163 | 2003 | 53 | 791 | 787 | 29 | 616 | 93 | 38 | 0 | 11 | 1.4 | 0 | | 0 | | 0 | |
| | | 2004 | 30 | 788 | 784 | 265 | 323 | 82 | 83 | 20 | 9 | 1.15 | 0 | | 2 | 0.26 | 0 | |
| | | 2005 | 14 | 701 | 696 | 54 | 454 | 114 | 40 | 12 | 20 | 2.87 | 0 | | 2 | 0.29 | 0 | |
| | | 2006 | 35 | 591 | 590 | 39 | 397 | 96 | 34 | 10 | 12 | 2.03 | 0 | | 2 | 0.34 | 0 | |
| | | 2007 | 43 | 494 | 493 | 4 | 378 | 40 | 24 | 45 | 3 | 0.61 | 0 | | 0 | | 0 | |
| | | 2008 | 30 | 484 | 477 | 65 | 222 | 92 | 59 | 12 | 16 | 3.35 | 0 | | 11 | 2.31 | 0 | |
| | | 2009 | 81 | 705 | 702 | 106 | 323 | 103 | 83 | 60 | 27 | 3.85 | 1 | 0.14 | 0 | | 0 | |
| | 2164 | 2003 | 48 | 787 | 780 | 63 | 491 | 171 | 18 | 1 | 15 | 1.92 | 0 | | 21 | 2.69 | 0 | |
| | | 2004 | 18 | 776 | 768 | 42 | 453 | 158 | 37 | 23 | 24 | 3.12 | 0 | | 31 | 4.04 | 0 | |
| | | 2005 | 13 | 701 | 697 | 38 | 415 | 145 | 12 | 1 | 11 | 1.58 | 0 | | 75 | 10.7 | 0 | |
| | | 2006 | 36 | 592 | 587 | 95 | 337 | 94 | 17 | 12 | 9 | 1.53 | 0 | | 23 | 3.92 | 0 | |
| | | 2007 | 44 | 494 | 492 | 0 | 356 | 72 | 22 | 38 | 4 | 0.81 | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 29 | 496 | 489 | 37 | 274 | 106 | 21 | 3 | 7 | 1.43 | 0 | | 41 | 8.38 | 0 | |
| | | 2009 | 80 | 700 | 700 | 59 | 329 | 205 | 36 | 30 | 14 | 2 | 0 | | 28 | 4 | 0 | |
| | 2165 | 2003 | 44 | 795 | 791 | 12 | 598 | 164 | 13 | 0 | 0 | | 0 | | 4 | 0.51 | 0 | |
| | | 2004 | 17 | 798 | 795 | 98 | 415 | 213 | 32 | 1 | 0 | | 0 | | 36 | 4.53 | 0 | |
| | | 2005 | 11 | 700 | 693 | 21 | 454 | 165 | 18 | 0 | 1 | 0.14 | 0 | | 35 | 5.05 | 0 | |
| | | 2006 | 31 | 593 | 573 | 43 | 336 | 153 | 24 | 2 | 0 | | 0 | | 17 | 2.97 | 0 | |
| | | 2007 | 56 | 497 | 484 | 2 | 353 | 95 | 9 | 5 | 0 | | 0 | | 20 | 4.13 | 0 | |
| | | 2008 | 35 | 490 | 482 | 17 | 315 | 113 | 24 | 6 | 0 | | 0 | | 7 | 1.45 | 0 | |
| | | 2009 | 78 | 703 | 697 | 42 | 384 | 191 | 50 | 19 | 0 | | 0 | | 11 | 1.58 | 0 | |
| | 2169 | 2003 | 54 | 787 | 787 | 8 | 626 | 116 | 7 | 29 | 0 | | 0 | | 0 | | 1 | 0.13 |
| | | 2004 | 9 | 796 | 796 | 286 | 346 | 106 | 47 | 11 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 42 | 698 | 696 | 3 | 504 | 61 | 19 | 118 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 25 | 596 | 595 | 31 | 420 | 93 | 16 | 35 | 0 | | 0 | | 0 | | 1 | 0.17 |
| | | 2007 | 41 | 487 | 487 | 5 | 396 | 18 | 25 | 42 | 0 | | 1 | 0.21 | 0 | | 0 | |
| | | 2008 | 44 | 493 | 488 | 124 | 237 | 67 | 17 | 41 | 0 | | 1 | 0.2 | 0 | | 1 | 0.2 |
| | | 2009 | 92 | 702 | 701 | 226 | 371 | 38 | 20 | 46 | 0 | | 0 | | 0 | | 0 | |
| | 2170 | 2003 | 70 | 797 | 797 | 8 | 571 | 47 | 106 | 65 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 10 | 793 | 792 | 99 | 508 | 60 | 83 | 42 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 22 | 698 | 696 | 54 | 420 | 100 | 104 | 17 | 2 | 0.29 | 0 | | 0 | | 0 | |
| | | 2006 | 3 | 599 | 595 | 28 | 419 | 78 | 43 | 26 | 1 | 0.17 | 0 | | 0 | | 0 | |
| | | 2007 | 62 | 501 | 495 | 25 | 322 | 58 | 74 | 16 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 78 | 501 | 498 | 36 | 276 | 45 | 115 | 23 | 3 | 0.6 | 0 | | 0 | | 0 | |
| | | 2009 | 88 | 703 | 703 | 271 | 245 | 55 | 67 | 64 | 0 | | 1 | 0.14 | 0 | | 0 | |
| | 2171 | 2003 | 69 | 797 | 797 | 139 | 479 | 77 | 54 | 6 | 3 | 0.38 | 36 | 4.52 | 0 | | 3 | 0.38 |
| | | 2004 | 11 | 792 | 789 | 151 | 396 | 73 | 99 | 58 | 1 | 0.13 | 10 | 1.27 | 0 | | 1 | 0.13 |
| | | 2005 | 21 | 697 | 696 | 99 | 382 | 112 | 30 | 31 | 15 | 2.16 | 28 | 4.02 | 0 | | 0 | |
| | | 2006 | 2 | 599 | 596 | 28 | 396 | 75 | 60 | 20 | 1 | 0.17 | 14 | 2.35 | 0 | | 2 | 0.34 |
| | | 2007 | 61 | 495 | 490 | 38 | 336 | 24 | 32 | 53 | 4 | 0.82 | 3 | 0.61 | 0 | | 0 | |
| | | 2008 | 77 | 491 | 488 | 87 | 226 | 50 | 103 | 11 | 3 | 0.61 | 9 | 1.84 | 0 | | 1 | 0.2 |
| | | 2009 | 87 | 705 | 702 | 244 | 205 | 39 | 152 | 24 | 1 | 0.14 | 34 | 4.84 | 0 | | 3 | 0.43 |
| | 2172 | 2003 | 68 | 793 | 793 | 8 | 662 | 99 | 11 | 4 | 0 | | 0 | | 0 | | 0 | |
| | | 2004 | 16 | 793 | 790 | 28 | 594 | 144 | 17 | 7 | 0 | | 0 | | 0 | | 0 | |
| | | 2005 | 19 | 703 | 700 | 1 | 562 | 132 | 7 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2006 | 44 | 592 | 587 | 0 | 463 | 114 | 11 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 60 | 503 | 501 | 1 | 419 | 76 | 4 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2008 | 43 | 483 | 479 | 4 | 405 | 56 | 13 | 1 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 86 | 704 | 704 | 26 | 521 | 134 | 19 | 4 | 0 | | 0 | | 0 | | 0 | |
| 5E | | | | | | | | | | | | | | | | | | |
| | 2143 | 2003 | 39 | 790 | 788 | 56 | 525 | 40 | 131 | 23 | 0 | | 13 | 1.65 | 0 | | 0 | |
| | | 2004 | 26 | 798 | 794 | 48 | 487 | 46 | 126 | 72 | 0 | | 13 | 1.64 | 0 | | 2 | 0.25 |
| | | 2005 | 1 | 696 | 694 | 94 | 421 | 44 | 78 | 55 | 0 | | 4 | 0.58 | 0 | | 0 | |
| | | 2006 | 26 | 597 | 592 | 59 | 305 | 106 | 68 | 49 | 0 | | 6 | 1.01 | 0 | | 0 | |
| | | 2007 | 53 | 494 | 492 | 35 | 289 | 29 | 60 | 72 | 0 | | 7 | 1.42 | 0 | | 0 | |
| | | 2008 | 25 | 492 | 489 | 58 | 283 | 49 | 66 | 27 | 0 | | 6 | 1.23 | 0 | | 0 | |
| | | 2009 | 68 | 704 | 703 | 151 | 253 | 19 | 83 | 175 | 0 | | 17 | 2.42 | 0 | | 5 | 0.71 |
| | 2144 | 2003 | 38 | 796 | 795 | 204 | 454 | 71 | 13 | 15 | 0 | | 0 | | 38 | 4.78 | 0 | |
| | | 2004 | 25 | 793 | 785 | 473 | 201 | 62 | 36 | 11 | 0 | | 0 | | 2 | 0.25 | 0 | |

| Area (5E) | Station | Year | Set | Hkd | Hko | Nb | Ne | No | 614 | 044 | 401 | CPUE | 442 | CPUE | 394 | CPUE | 424 | CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2144 | 2005 | 2 | 696 | 692 | 299 | 234 | 41 | 56 | 58 | 0 | | 2 | 0.29 | 2 | 0.29 | 0 | |
| | | 2006 | 27 | 599 | 594 | 345 | 193 | 41 | 12 | 3 | 0 | | 0 | | 0 | | 0 | |
| | | 2007 | 52 | 494 | 493 | 134 | 289 | 29 | 25 | 14 | 0 | | 0 | | 1 | 0.2 | 0 | |
| | | 2008 | 26 | 490 | 480 | 207 | 199 | 27 | 38 | 11 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 69 | 701 | 699 | 390 | 135 | 48 | 100 | 26 | 0 | | 0 | | 0 | | 0 | |
| | 2146 | 2003 | 37 | 796 | 794 | 43 | 479 | 111 | 19 | 9 | 44 | 5.54 | 0 | | 89 | 11.2 | 0 | |
| | | 2004 | 27 | 795 | 791 | 25 | 412 | 185 | 20 | 17 | 30 | 3.79 | 0 | | 102 | 12.9 | 0 | |
| | | 2005 | 3 | 692 | 687 | 25 | 375 | 98 | 15 | 7 | 36 | 5.24 | 0 | | 131 | 19.0 | 0 | |
| | | 2006 | 28 | 593 | 589 | 5 | 369 | 75 | 22 | 6 | 16 | 2.72 | 0 | | 97 | 16.4 | 0 | |
| | | 2007 | 51 | 488 | 487 | 3 | 326 | 97 | 19 | 9 | 6 | 1.23 | 0 | | 27 | 5.54 | 0 | |
| | | 2008 | 27 | 496 | 493 | 17 | 283 | 122 | 21 | 1 | 7 | 1.42 | 0 | | 41 | 8.32 | 0 | |
| | | 2009 | 70 | 703 | 703 | 47 | 370 | 107 | 22 | 16 | 47 | 6.69 | 0 | | 94 | 13.3 | 0 | |
| | 2149 | 2003 | 40 | 795 | 791 | 83 | 469 | 24 | 143 | 38 | 0 | | 34 | 4.3 | 0 | | 0 | |
| | | 2004 | 29 | 800 | 794 | 104 | 366 | 25 | 139 | 94 | 0 | | 66 | 8.31 | 0 | | 0 | |
| | | 2005 | 4 | 701 | 688 | 84 | 405 | 30 | 103 | 30 | 0 | | 37 | 5.38 | 0 | | 0 | |
| | | 2006 | 29 | 595 | 587 | 41 | 382 | 29 | 95 | 15 | 0 | | 25 | 4.26 | 0 | | 0 | |
| | | 2007 | 50 | 487 | 481 | 0 | 318 | 21 | 88 | 35 | 0 | | 19 | 3.95 | 0 | | 0 | |
| | | 2008 | 28 | 498 | 414 | 9 | 270 | 29 | 77 | 18 | 0 | | 12 | 2.9 | 0 | | 0 | |
| | | 2009 | 71 | 704 | 699 | 11 | 348 | 14 | 161 | 127 | 0 | | 40 | 5.72 | 0 | | 1 | 0.14 |
| | 2151 | 2003 | 41 | 791 | 790 | 74 | 532 | 41 | 96 | 1 | 0 | | 35 | 4.43 | 0 | | 11 | 1.39 |
| | | 2004 | 28 | 788 | 779 | 98 | 528 | 61 | 45 | 5 | 0 | | 27 | 3.47 | 0 | | 15 | 1.93 |
| | | 2005 | 5 | 700 | 696 | 51 | 478 | 59 | 75 | 4 | 0 | | 13 | 1.87 | 1 | 0.14 | 16 | 2.3 |
| | | 2006 | 37 | 593 | 588 | 44 | 377 | 44 | 96 | 7 | 0 | | 15 | 2.55 | 0 | | 6 | 1.02 |
| | | 2007 | 49 | 494 | 488 | 26 | 370 | 17 | 48 | 7 | 0 | | 13 | 2.66 | 0 | | 8 | 1.64 |
| | | 2008 | 36 | 487 | 470 | 41 | 305 | 31 | 53 | 12 | 0 | | 19 | 4.04 | 0 | | 9 | 1.91 |
| | | 2009 | 72 | 700 | 695 | 32 | 488 | 43 | 85 | 6 | 0 | | 34 | 4.89 | 0 | | 8 | 1.15 |
| | 2156 | 2003 | 42 | 795 | 795 | 111 | 568 | 31 | 62 | 4 | 0 | | 10 | 1.26 | 0 | | 9 | 1.13 |
| | | 2004 | 21 | 799 | 791 | 148 | 491 | 44 | 44 | 14 | 0 | | 20 | 2.53 | 0 | | 30 | 3.79 |
| | | 2005 | 9 | 692 | 689 | 62 | 504 | 37 | 50 | 8 | 0 | | 11 | 1.6 | 0 | | 17 | 2.47 |
| | | 2006 | 32 | 593 | 588 | 58 | 411 | 48 | 40 | 13 | 0 | | 6 | 1.02 | 0 | | 13 | 2.21 |
| | | 2007 | 54 | 502 | 496 | 66 | 324 | 24 | 33 | 22 | 0 | | 8 | 1.61 | 0 | | 19 | 3.83 |
| | | 2008 | 33 | 505 | 503 | 46 | 310 | 42 | 62 | 22 | 0 | | 14 | 2.78 | 0 | | 8 | 1.59 |
| | | 2009 | 76 | 702 | 701 | 109 | 377 | 47 | 56 | 44 | 0 | | 32 | 4.56 | 0 | | 38 | 5.14 |
| | 2157 | 2003 | 47 | 792 | 788 | 8 | 628 | 85 | 9 | 2 | 0 | | 0 | | 56 | 7.11 | 0 | |
| | | 2004 | 24 | 791 | 778 | 66 | 510 | 139 | 32 | 0 | 0 | | 0 | | 31 | 3.98 | 0 | |
| | | 2005 | 6 | 697 | 695 | 8 | 404 | 136 | 19 | 0 | 0 | | 0 | | 128 | 18.4 | 0 | |
| | | 2006 | 38 | 595 | 590 | 1 | 514 | 49 | 11 | 0 | 0 | | 0 | | 16 | 2.71 | 0 | |
| | | 2007 | 46 | 490 | 484 | 2 | 358 | 72 | 14 | 10 | 0 | | 0 | | 28 | 5.79 | 0 | |
| | | 2008 | 37 | 488 | 483 | 9 | 333 | 42 | 32 | 3 | 0 | | 0 | | 65 | 13.4 | 0 | |
| | | 2009 | 73 | 704 | 704 | 2 | 452 | 104 | 10 | 20 | 0 | | 0 | | 116 | 16.4 | 0 | |
| | 2166 | 2003 | 43 | 788 | 788 | 53 | 531 | 187 | 16 | 0 | 0 | | 0 | | 1 | 0.13 | 0 | |
| | | 2004 | 20 | 798 | 209 | 77 | 81 | 37 | 8 | 1 | 0 | | 0 | | 5 | 2.39 | 0 | |
| | | 2005 | 10 | 698 | 688 | 34 | 398 | 185 | 29 | 0 | 0 | | 0 | | 42 | 6.1 | 0 | |
| | | 2006 | 30 | 594 | 588 | 188 | 205 | 174 | 12 | 1 | 0 | | 0 | | 9 | 1.53 | 0 | |
| | | 2007 | 55 | 488 | 485 | 30 | 305 | 126 | 8 | 4 | 0 | | 0 | | 12 | 2.47 | 0 | |
| | | 2008 | 34 | 490 | 481 | 8 | 313 | 126 | 18 | 1 | 0 | | 0 | | 15 | 3.12 | 0 | |
| | | 2009 | 77 | 704 | 692 | 138 | 253 | 215 | 50 | 5 | 0 | | 0 | | 33 | 4.77 | 0 | |
| | 2167 | 2003 | 45 | 788 | 786 | 95 | 394 | 44 | 45 | 12 | 103 | 13.1 | 92 | 11.7 | 1 | 0.13 | 0 | |
| | | 2004 | 22 | 795 | 786 | 100 | 300 | 56 | 72 | 28 | 171 | 21.7 | 59 | 7.51 | 0 | | 0 | |
| | | 2005 | 7 | 702 | 697 | 28 | 391 | 96 | 57 | 12 | 70 | 10.0 | 47 | 6.74 | 0 | | 0 | |
| | | 2006 | 39 | 593 | 575 | 20 | 352 | 30 | 70 | 14 | 71 | 12.3 | 21 | 3.65 | 0 | | 0 | |
| | | 2007 | 47 | 489 | 483 | 5 | 272 | 36 | 54 | 51 | 41 | 8.49 | 23 | 4.76 | 0 | | 0 | |
| | | 2008 | 38 | 495 | 484 | 31 | 280 | 34 | 49 | 7 | 43 | 8.88 | 40 | 8.26 | 0 | | 0 | |
| | | 2009 | 75 | 699 | 697 | 24 | 407 | 22 | 76 | 66 | 80 | 11.4 | 23 | 3.3 | 0 | | 0 | |
| | 2168 | 2003 | 46 | 791 | 789 | 114 | 524 | 25 | 107 | 18 | 1 | 0.13 | 0 | | 0 | | 0 | |
| | | 2004 | 23 | 801 | 795 | 117 | 419 | 58 | 102 | 92 | 7 | 0.88 | 0 | | 0 | | 0 | |
| | | 2005 | 8 | 700 | 698 | 27 | 501 | 51 | 92 | 24 | 4 | 0.57 | 0 | | 0 | | 0 | |
| | | 2006 | 40 | 598 | 583 | 16 | 486 | 13 | 61 | 3 | 3 | 0.51 | 1 | 0.17 | 0 | | 0 | |
| | | 2007 | 48 | 499 | 493 | 10 | 357 | 20 | 53 | 50 | 3 | 0.61 | 0 | | 0 | | 0 | |
| | | 2008 | 39 | 498 | 488 | 83 | 312 | 8 | 72 | 13 | 0 | | 0 | | 0 | | 0 | |
| | | 2009 | 74 | 700 | 698 | 90 | 391 | 23 | 141 | 49 | 3 | 0.43 | 1 | 0.14 | 0 | | 0 | |